



SKB Environmental, Inc.

# Coal Combustion Residuals Annual Groundwater Monitoring Report

SKB Rosemount Industrial Waste Facility  
13425 Courthouse Boulevard  
Rosemount, Minnesota

January 29, 2018

Final



**Coal Combustion Residuals Annual  
Groundwater Monitoring Report**

SKB Rosemount Industrial Waste Facility  
13425 Courthouse Boulevard  
Rosemount, Minnesota

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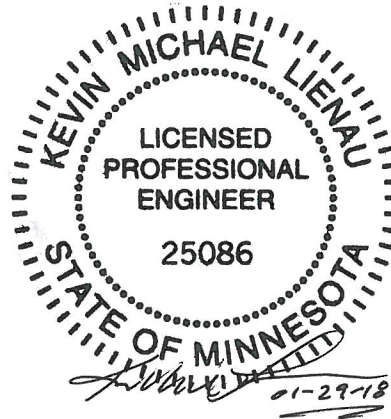
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## Acronyms

BTV	Background Threshold Values
CCR	Coal Combustion Residuals (CCR)
CFR	Code of Federal Regulations
COC	Chemicals of Concern
GES	Groundwater & Environmental Services, Inc.
ug/L	micrograms per liter
mg/l	milligrams per liter
MPCA	Minnesota Pollution Control Agency
NGVD	National Geodetic Vertical Datum
pci/l	picoCuries per liter
QA/QC	Quality assurance/quality control
SAP	Sampling Analysis Plan
SKB Rosemount Landfill	SKB Rosemount Industrial Waste Facility
USL	Upper Simultaneous Limit



## 1 Introduction

The *Combustion Coal Residuals Annual Groundwater Monitoring Report* (Report) was prepared to summarize the results of 2017 groundwater monitoring events and associated analysis for Coal Combustion Residuals (CCR) at the SKB Rosemount Industrial Waste Facility (SKB Rosemount Landfill). The SKB Landfill operates under Minnesota Pollution Control Agency (MPCA) Site Permit Number SW-383. Per CFR 40.257.90 – 257.98, 8 groundwater sampling events were conducted at the SKB Rosemount Landfill in 2017 for the purpose of collecting CCR background groundwater analytical data. Using statistical evaluations, the 2017 CCR groundwater data was evaluated to determine CCR Background Threshold Values (BTVs). The SKB Rosemount Landfill is located at 13425 Courthouse Boulevard, Rosemount, Dakota County, Minnesota (**Figure 1**).

### 1.1 Scope of Work

The following scope of work was conducted for the 2017 CCR background monitoring project:

- Conduct 8 gauging and sampling events of the site's monitoring wells.
- Measure static water elevations for each monitoring well to the nearest 0.01 feet from surveyed reference point.
- Record the volume of water removed from each monitoring well (in gallons) and total well volumes removed before sampling.
- Record field parameter stabilization results from each monitoring well.
- Conduct a statistical evaluation of groundwater sampling analytical data using ProUCL 5.0.00 (Singh, 2013) to determine BTVs for each analyte.
- Select tolerance or prediction interval procedure for future statistical analysis of groundwater monitoring data.
- Prepare a CCR Annual Groundwater Monitoring Report summarizing the groundwater sampling and statistical evaluation.



## 2 Site Background

### 2.1 Site Location and Description

SKB Rosemount Landfill was initially operated as an industrial waste containment facility. In the fall of 1999, the facility opened a Municipal Solid Waste Incinerator Ash cell (Cell 4), in the summer of 2004 the facility opened a Construction and Demolition cell (Cell 5), and in the fall 2009 the facility opened the 3M cell (Cell 3M). The site is located within a 236-acre parcel of land in Sections 19, 20, and 29, Township 115 North, Range 18 West, Dakota County, Minnesota (**Figure 1**). With reference to roadways, the facility is located between State Highway 55 and Ehlers Path East. The facility entrance is from State Highway 55.

Located in the Vermillion River watershed, the historical property prior to development, consist of rolling topography ranging in elevation from 820 feet above the National Geodetic Vertical Datum of 1929 (NGVD 29) in the southwest corner to 907 feet above NGVD 29 near the middle of the site. The site has since been altered, with the low point 800 feet above NGVD in the bottom of Cell 3A and Cell 3B to 930 feet above NGVD at the top of Cell 1, Cell 2, and Cell 3A. A seasonal pond is located on the southwest corner of the property. The pond is historically dry except following heavy rain events. Stormwater flows either to natural depressions scattered about the site or to stormwater retention areas in the southwest and north-central area of the property. Stormwater collected in these areas infiltrates into the soil. The nearest open water body is the Mississippi River located approximately 1 mile northeast of the site.



### 3 Monitoring Network Systems and Sampling Schedule

The groundwater monitoring network at the SKB Rosemount Landfill was designed based on the analysis of local and regional hydrologic conditions. Groundwater beneath the site generally moves from southwest (upgradient) to northeast (downgradient). Currently the system consists of 28 monitoring wells and 5 piezometers, 5 abandoned wells, and 1 abandoned piezometer (see **Figure 2** and **Table 1**).

The monitoring wells and piezometers used as data collection points have been divided into 5 groups for the purpose of this report:

- Shallow Upgradient Monitoring Points (designated U#S). The shallow upgradient monitoring points consist of the monitoring wells that are completed in the shallow water table aquifer south (upgradient) of the compliance boundary.
- Deep Upgradient Monitoring Points (designated U#D). The deep upgradient monitoring points consist of monitoring wells that are completed in the Outwash/Prairie du Chien aquifer south of the compliance boundary.
- Shallow Downgradient Monitoring Points (designated D#S). The shallow downgradient monitoring points consist of the monitoring wells that are completed in the shallow water table aquifer along the north (downgradient) compliance boundary.
- Deep Downgradient Monitoring Points (designated D#D). The deep downgradient monitoring points consist of monitoring wells that are completed in the Outwash/Prairie du Chien aquifer north (downgradient) of the compliance boundary.
- Cell Wells (designated CW#). The cell wells are monitoring wells completed in the shallow aquifer immediately downgradient of the cell sumps.

For the CCR background evaluation, a total of 8 groundwater monitoring events were conducted in 2017 on the following dates:

- February 21-22, 2017
- March 21-23, 2017
- April 24-25, 2017
- May 15-16, 2017
- June 26-28, 2017
- July 25-26, 2017
- August 14-15, 2017
- September 5-6, 2017



## 4 Groundwater Sample Methodology

For the SKB Rosemount Landfill CCR sampling events, static groundwater elevations were measured to the nearest 0.01 feet in each monitoring well with a water interface probe prior to groundwater sample collection. Using a well dedicated, pneumatic low-flow bladder pump, each well was purged and field stabilization parameters including temperature, pH, dissolved oxygen, conductance, and redox potential were measured.

Groundwater samples were placed in laboratory-prepared containers and labeled with the following information:

- Unique sample number
- Site name
- Name of sampler
- Time and date

Immediately following collection, samples were placed on ice in a field cooler and shipped with a chain of custody form to a Test America, Inc. (Test America) of Amhurst, New York.

Groundwater samples obtained during the 8 sampling events in 2017 were analyzed for parameters specified in **Appendix III and IV** to Part 257 and are noted below:

### Appendix III

#### *General Chemistry*

- Chloride (Method 300.0)
- Fluoride (Method 300.0)
- Sulfate as SO<sub>4</sub> (Method 300.0)
- pH (Standard Method 4500 H+ B)
- Total Dissolved Solids (Standard Method 2540C)

#### *Metals*

- Boron (Method 6010C)
- Calcium (Method 6010C)

### Appendix IV

#### *General Chemistry*

- Fluoride (Method 300.0)

#### *Metals*

- Antimony
- Arsenic
- Barium
- Beryllium



- Cadmium
- Chromium
- Cobalt
- Lead
- Lithium
- Mercury
- Molybdenum
- Radium 226
- Radium 228
- Selenium
- Thallium

The above metals were analyzed by Methods 6010C, 6020A, and 7470A. Radium was analyzed by Method 901.1.

Quality assurance/quality control (QA/QC) samples including duplicate, field, and equipment samples were collected during each sampling event.

## 5 Groundwater Monitoring Results

### 5.1 Groundwater Elevation Data

Groundwater elevations recorded during the groundwater events are presented in **Table 1**. Groundwater contours maps were generated for the March 21, June 26, and September 5, 2017 monitoring events. Groundwater elevation contour maps for both the water table and the deeper monitoring zone are presented in **Figures 3** through **Figure 8**. In general, groundwater flows from the southwest to northeast, which is consistent with historical groundwater flow direction. At the water table, horizontal gradients range from approximately 0.0077 to 0.0333 ft/ft, with flatter gradients in the south and steeper gradients in the north. In the deeper monitoring zone, gradients average approximately 0.01819 to 0.01111 ft/ft and are more uniform across the site.

### 5.2 Groundwater Analytical Data

A summary of the stabilization parameter tests performed for each well prior to sampling is provided in **Table 3** and copies of field sampling data sheets are in **Appendix A**. Groundwater analytical results for the CCR monitoring events are presented in **Table 2**. Laboratory analytical reports are included in **Appendix B**.

A summary of the groundwater analytical concentrations for each analyte are summarized below:

#### Appendix III

##### *General Chemistry*

- Chloride = 16.1 - 150 milligrams per liter (mg/l)
- Fluoride = <0.10 – 0.13 mg/l
- Sulfate as SO<sub>4</sub> = 23.3 – 75.8 mg/l
- pH = 7.2 – 8.1 pH Units
- Total Dissolved Solids = 311 - 696 mg/l

##### *Metals*

- Boron = <0.020 – 0.079 mg/l
- Calcium = 65.1 - 124 mg/l

#### Appendix IV

##### *General Chemistry*

- Fluoride = <0.10 – 0.13 mg/l



## Metals

- Antimony = <1.0 micrograms per liter (ug/l)
- Arsenic = <1.0 – 1.6 ug/l
- Barium = 0.039 – 0.085 mg/l
- Beryllium = <0.70 ug/l
- Cadmium = <0.50 ug/l
- Chromium = <0.0040 – 0.049 mg/l
- Cobalt = <0.30 – 1.4 ug/l
- Lead = <0.010 mg/l
- Lithium = <0.030 mg/l
- Mercury = <0.20 ug/l
- Molybdenum = <1.0 ug/l
- Radium 226 = <0.0616 – 97.1 pci/l
- Radium 228 = <0.263 – 32.4 pci/l
- Selenium = <1.0 – 2.1 ug/l
- Thallium = <0.20 ug/l



## 6 Statistical Evaluation Data

Statistical evaluation of the 2017 CCR groundwater monitoring data was completed to determine background concentrations and included:

- 1) Establishing final background datasets for each chemical of concern (COC) using outlier testing.
- 2) Deriving statistical, upper bound estimates of the background population for each COC using the final background datasets.

To establish final background datasets for each COC, descriptive statistics, outlier analysis and comparative statistical analysis on the background datasets are typically performed to confirm whether all data in each background dataset for a given COC is representative of the 'true' background population. Descriptive statistics including the number of samples, the number of detections, the detection frequency, the maximum and minimum detected concentrations, the mean, and the standard deviation of the background data, all of which provide a preliminary examination of data.

An outlier analysis can identify potential outliers that are not representative of the true background population. Including real outliers in a dataset can potentially lead to Type I or Type II errors (USEPA. 2002. Guidance for Comparing Background and Chemical Concentrations for CERCLA Sites). Methods of outlier analysis include statistical outlier tests such as Dixon's test, which is available in ProUCL 5.0.00 (Singh, 2013). Outliers were only attributed to those data sets that had more than 4 detections, otherwise all detections are statistically significant.

For the final background datasets after outlier analyses, summary statistics including the number of samples, number of detections, detection frequency, maximum and minimum detected concentrations, mean concentration, and the standard deviation will be calculated. The final datasets were tested for the underlying distributions (e.g., normal, lognormal, gamma) using ProUCL 5.0.00 (Singh, 2013) before statistical limits were estimated in order to determine the estimates that best described the background datasets.

The following statistical limits for potential use as a background level (BTVs) were calculated using ProUCL 5.0.00 (Singh, 2013) for each COC when five or more detections were present:

- 95% upper simultaneous limit (USL)

The 95% USL was selected as the proposed BTVs as:

- 1) Many of the background datasets contain limited sample sizes and, therefore, are unlikely to represent the full range of natural ambient concentrations in the vicinity of the sites, and
- 2) This statistic should result in lower Type I error rates (i.e., false positives) and can be used to compare many observations.



If there were no detected results, the highest detection limit was proposed as the BTV. The calculated BTVs are included in **Table 4**. The statistical evaluation data is included in **Appendix C**.



## 7 Report Summary

Per CFR 40.275.90 – 275.98, 8 monitoring events were conducted at the SKB Rosemount Landfill in 2017 for the purpose of determining background CCR concentrations. Groundwater samples were collected from the monitoring network's 8 monitoring wells located at the SKB Rosemount Landfill during the monthly monitoring events. Groundwater elevation information from the monitoring data indicates a southwesterly groundwater flow beneath the landfill. Using statistical evaluations of the groundwater sampling results, BTVs were determined (**Table 4**).



## 8 Recommendations

CCR groundwater monitoring events will be conducted in the spring and fall of 2018. Groundwater samples will be analyzed for detection monitoring parameters specified in Appendix III to Part 257. An evaluation of groundwater analytical results after each monitoring event will be completed to determine if a significant increase over BTVs (**Table 4**) for one or more parameter listed in Appendix III to Part 257 has occurred at any monitoring well. The evaluation will be performed using a tolerance or prediction interval procedure (CFR 40.257.93(f)(3)). The level of each constituent in the monitoring well will be compared to an established BTV generated as the USL. Any single constituent that exceeds the BTV is considered to be an exceedance. Confirmation sampling will determine whether the BTV exceedance is statistically significant. As data from 2017 was used to generate the background data, comparison of data will begin in subsequent 2018 sampling events.

A 2018 Annual Groundwater Monitoring Report will be prepared and include sampling results from the 2018 CCR groundwater monitoring events and an evaluation of the analytical results as they pertained to BTVs.



## References

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- Singh and Singh, 2013. *ProUCL Version 5.0.00 Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*, United States Environmental Protection Agency
- United States Environmental Protection Agency, 2002. *Guidance for Comparing Background and Chemical Concentrations for CERCLA Sites*.
- United States Geological Survey, 1967 (revised 1993). *7.5-minute quadrangle map, Inver Grove Heights*.



## Figures

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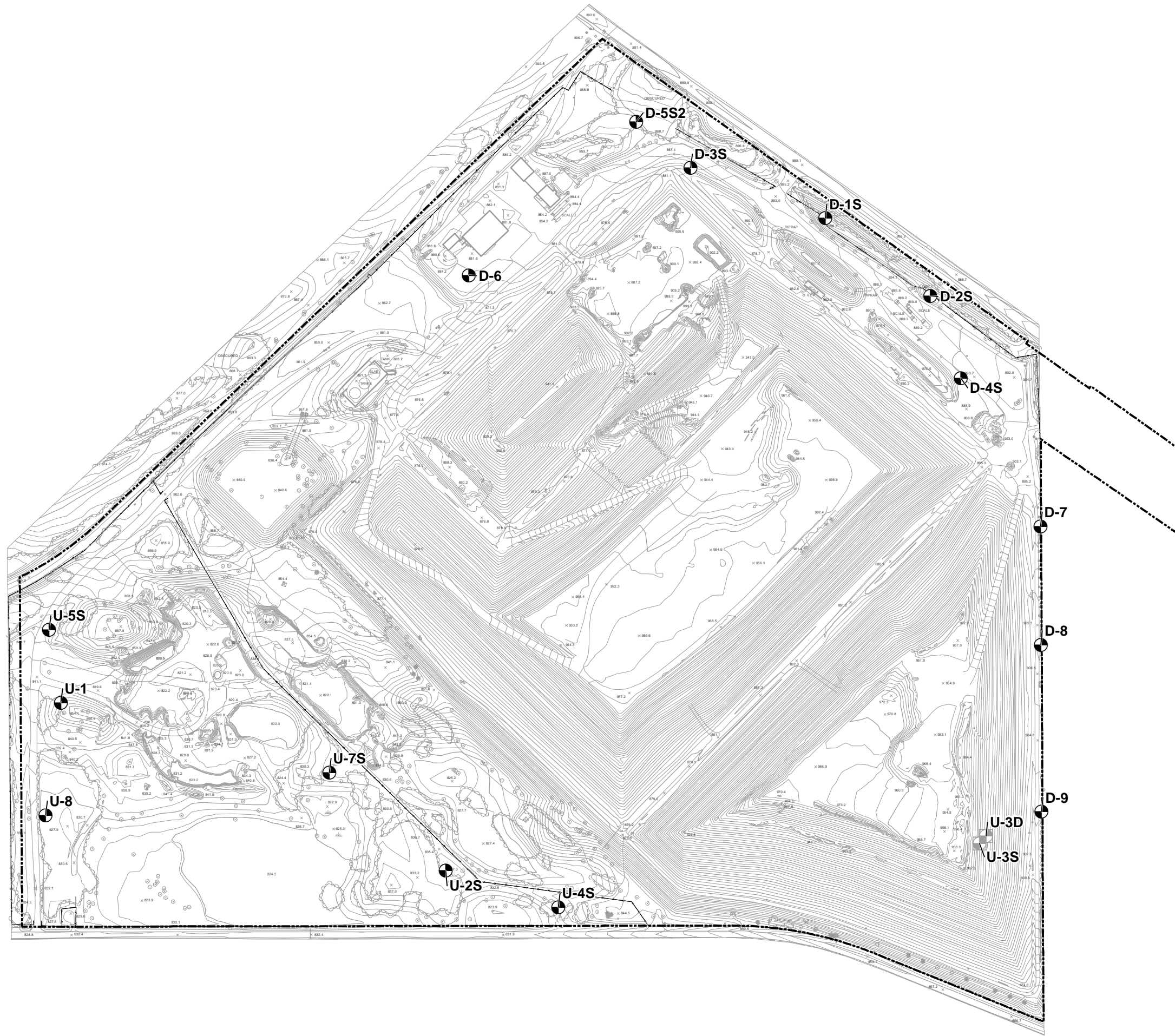
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 TOPOGRAPHIC QUADRANGLE 1993  
 INVER GROVE HEIGHTS, MINNESOTA  
 CONTOUR INTERVAL = 10'



QUADRANGLE LOCATION

DRAFTED BY: W.G.S. (N.J.)	<b>SITE LOCATION MAP</b>		
CHECKED BY:	<b>SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA</b>		
REVIEWED BY:	<b>Groundwater &amp; Environmental Services, Inc. 1285 CORPORATE CENTER DRIVE, SUITE 120, EAGAN, MN 55121</b>		
NORTH 	SCALE IN FEET 	DATE 1-10-14	FIGURE 1
	0                      2000		



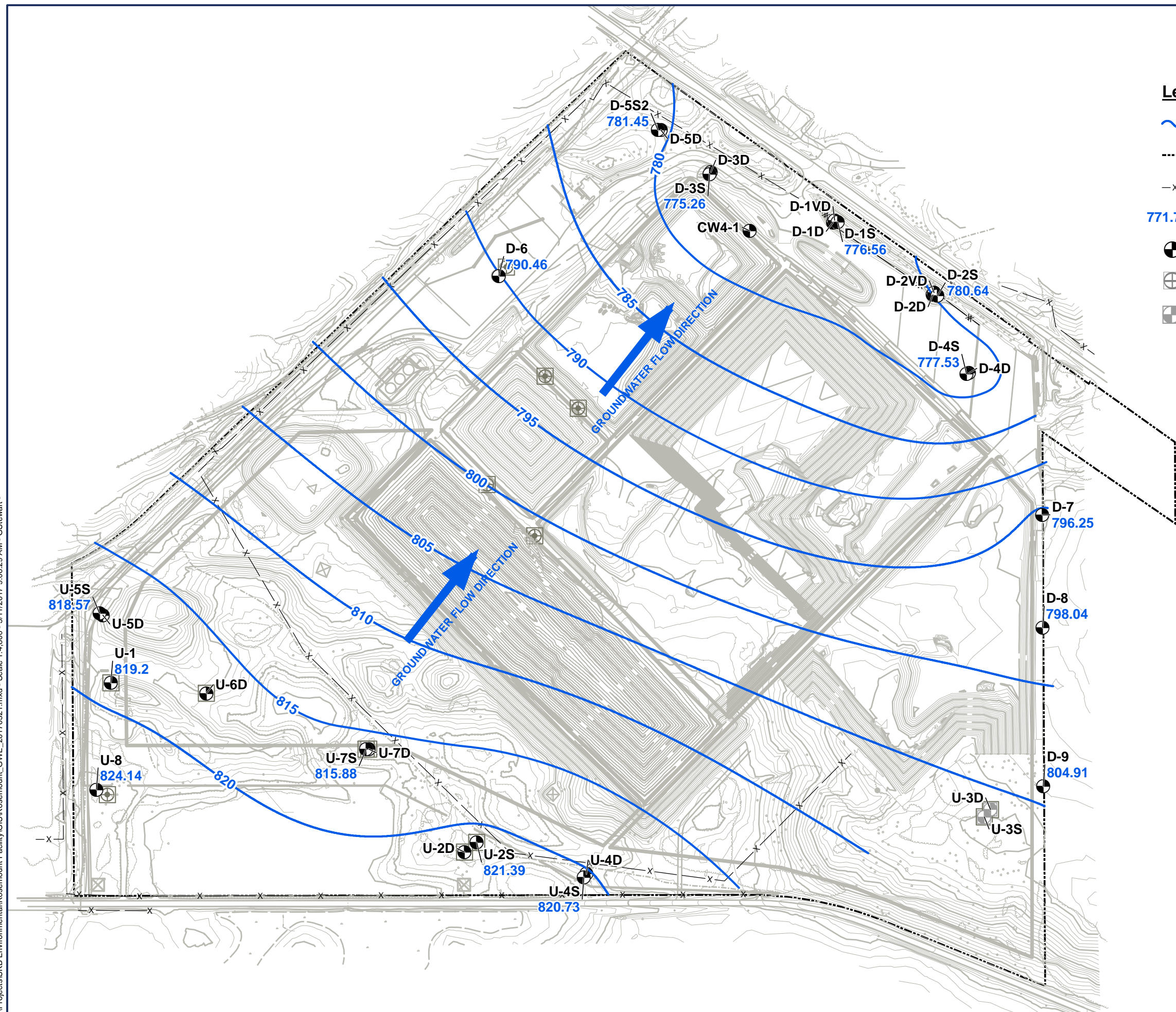


- Legend**
- PROPERTY BOUNDARY
  - x- FENCE
  - ⊕ MONITORING WELL
  - ⊕ DESTROYED MONITORING WELL
  - ⊕ ABANDONED MONITORING WELL

<b>SITE MAP</b>		
<b>SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA</b>		
Drawn <b>JTL</b>		Date <b>1-5-18</b>
Designed <b>DMC</b>		Figure <b>2</b>
Approved <b></b>		
Scale In Feet (Approximate) 0 400		
 Groundwater & Environmental Services, Inc.		



- Legend**
- GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
  - PROPERTY BOUNDARY
  - FENCE
  - 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
  - MONITORING WELL
  - DESTROYED MONITORING WELL
  - ABANDONED MONITORING WELL



DRAFTED BY: GKS	<b>WATER TABLE CONTOUR MAP</b> MARCH 21, 2017		
CHECKED BY: DMC	SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA		
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1285 CORPORATE CENTER DRIVE, SUITE 120, EAGAN, MN 55121		
NORTH 	SCALE IN FEET 	DATE 5-11-17	FIGURE 3

L:\Projects\SKB Environmental\Rosemount Facility\GIS\Rosemount\_GWE\_20170321.mxd - Scale 1:4,800 - 5/11/2017 9:06:29 AM - GStewart -



**Legend**

- GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
- PROPERTY BOUNDARY
- FENCE
- 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
- MONITORING WELL
- DESTROYED MONITORING WELL
- ABANDONED MONITORING WELL

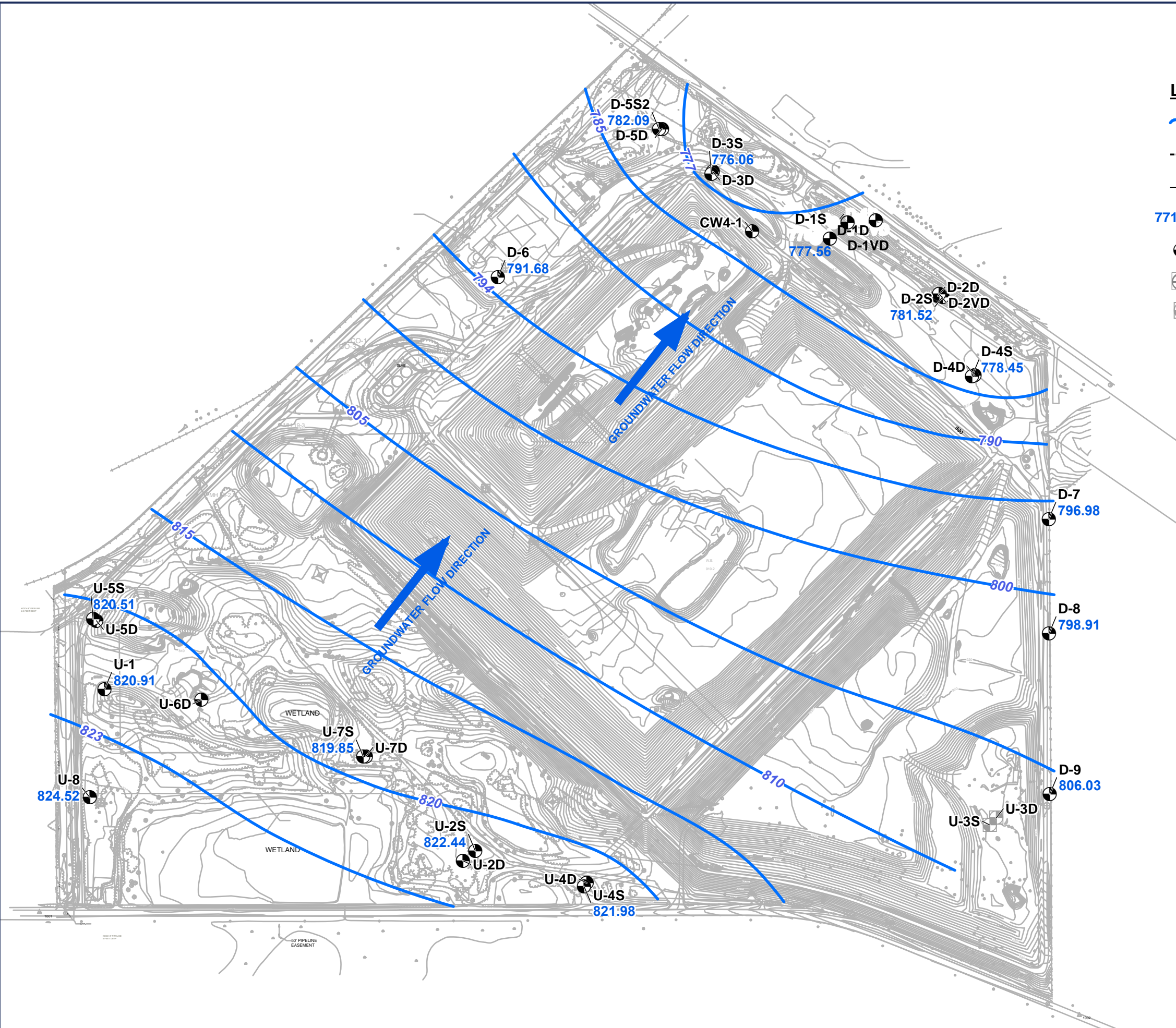


DRAFTED BY: GKS	POTENTIOMETRIC SURFACE CONTOUR MAP MARCH 21, 2017		
CHECKED BY: DMC	SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA		
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1285 CORPORATE CENTER DRIVE, SUITE 120, EAGAN, MN 55121		
NORTH 	SCALE IN FEET 	DATE 5-11-17	FIGURE 4



**Legend**

- GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
- PROPERTY BOUNDARY
- FENCE
- 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
- MONITORING WELL
- DESTROYED MONITORING WELL
- ABANDONED MONITORING WELL

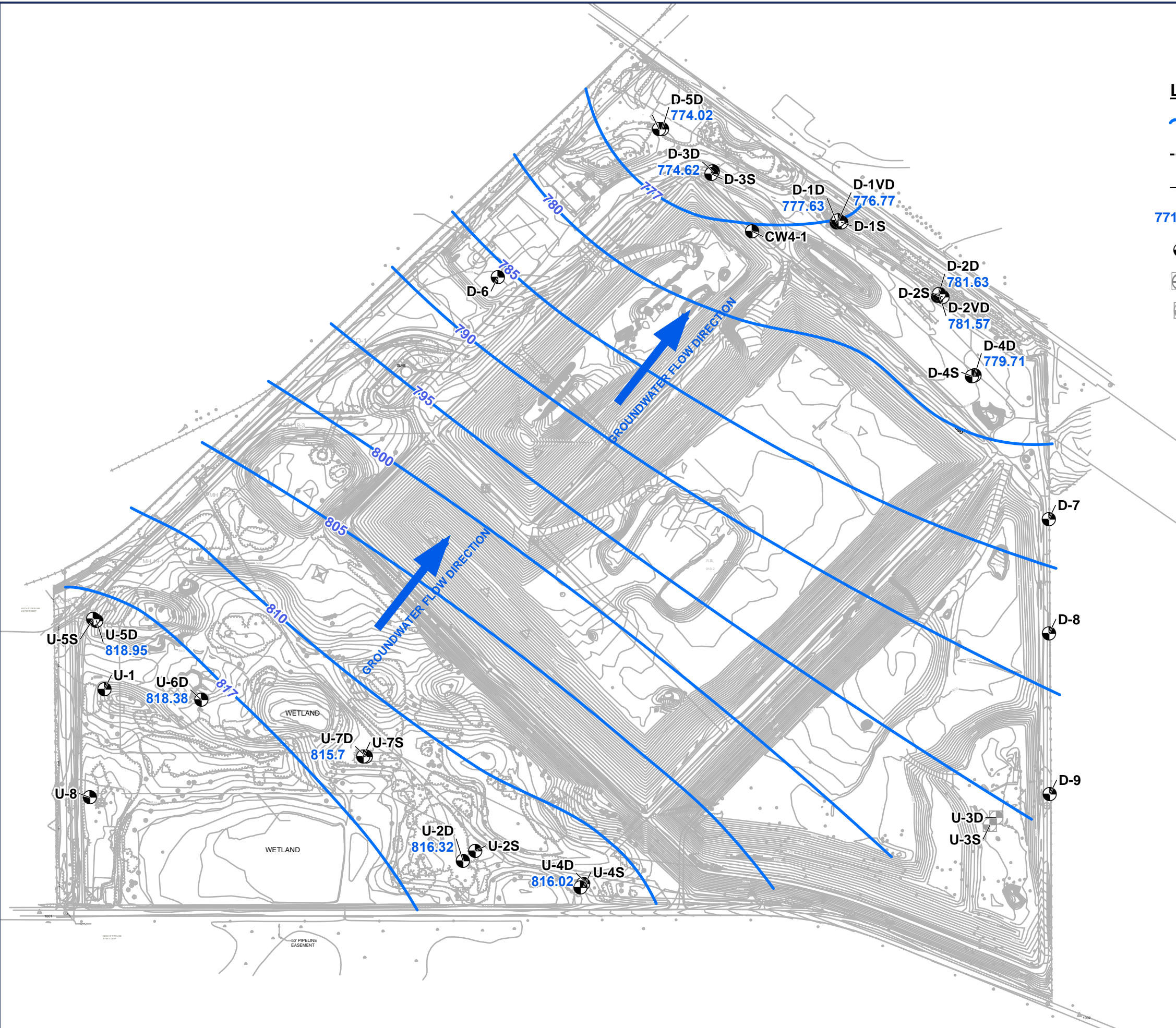


DRAFTED BY: GKS	WATER TABLE CONTOUR MAP JUNE 26, 2017		
CHECKED BY: DMC	SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA		
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1285 CORPORATE CENTER DRIVE, SUITE 120, EAGAN, MN 55121		
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




**Legend**

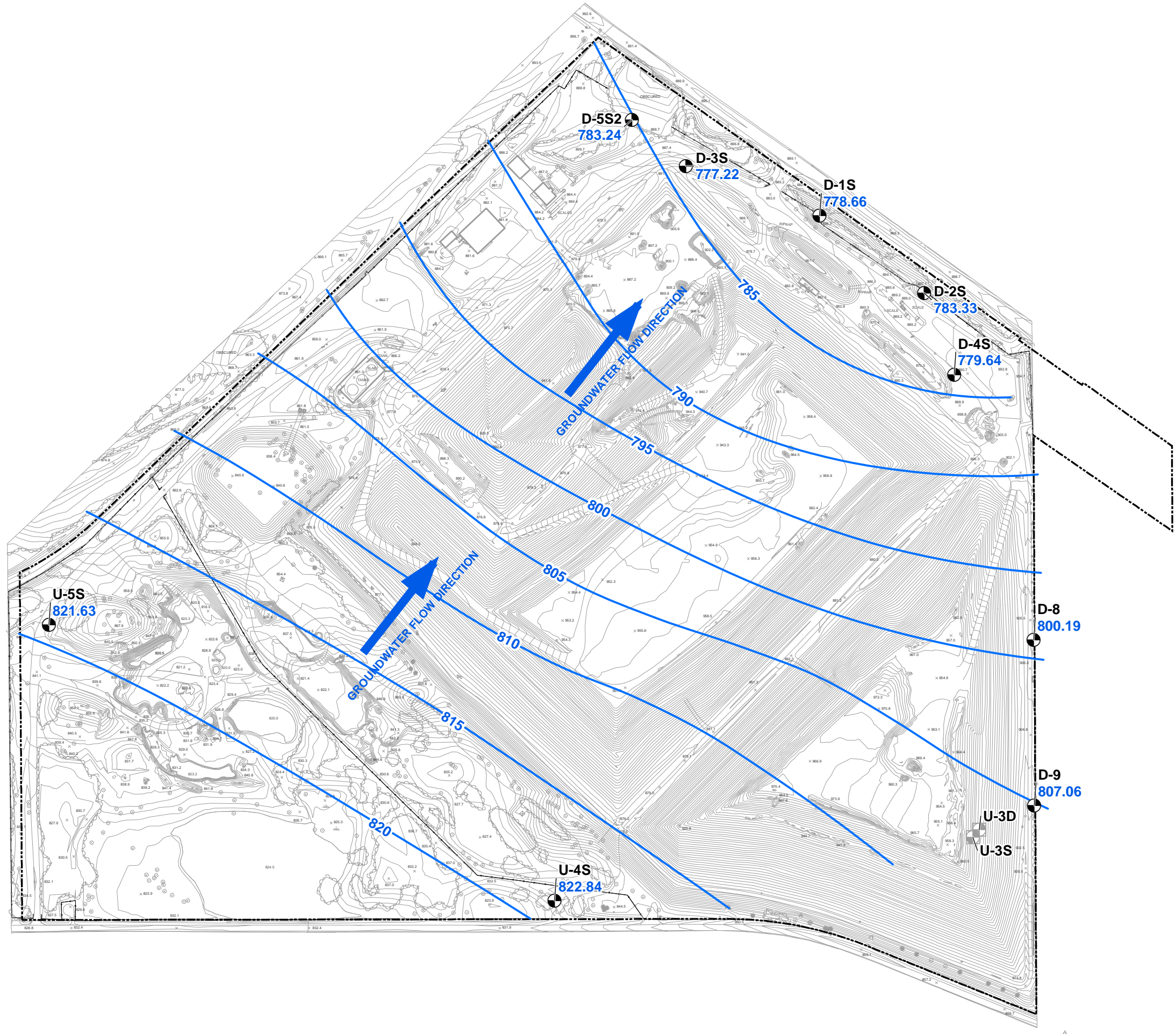
- GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
- PROPERTY BOUNDARY
- FENCE
- 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
- MONITORING WELL
- DESTROYED MONITORING WELL
- ABANDONED MONITORING WELL



DRAFTED BY: GKS	POTENTIOMETRIC SURFACE CONTOUR MAP <b>JUNE 26, 2017</b>		
CHECKED BY: DMC	SKB ENVIRONMENTAL INC. ROSEMOUNT FACILITY 13425 COURTHOUSE BOULEVARD ROSEMOUNT, MINNESOTA		
REVIEWED BY:	Groundwater & Environmental Services, Inc. 1285 CORPORATE CENTER DRIVE, SUITE 120, EAGAN, MN 55121		
	SCALE IN FEET	DATE	FIGURE
		8-23-16	6



- Legend**
-  GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
  -  PROPERTY BOUNDARY
  -  FENCE
  - 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
  -  MONITORING WELL
  -  DESTROYED MONITORING WELL
  -  ABANDONED MONITORING WELL



**WATER TABLE CONTOUR MAP  
SEPTEMBER 5-6, 2017**

**SKB ENVIRONMENTAL INC.  
ROSEMOUNT FACILITY  
13425 COURTHOUSE BOULEVARD  
ROSEMOUNT, MINNESOTA**

Drawn JTL Designed JTL Approved DMC	Date 1-29-18 Figure 7
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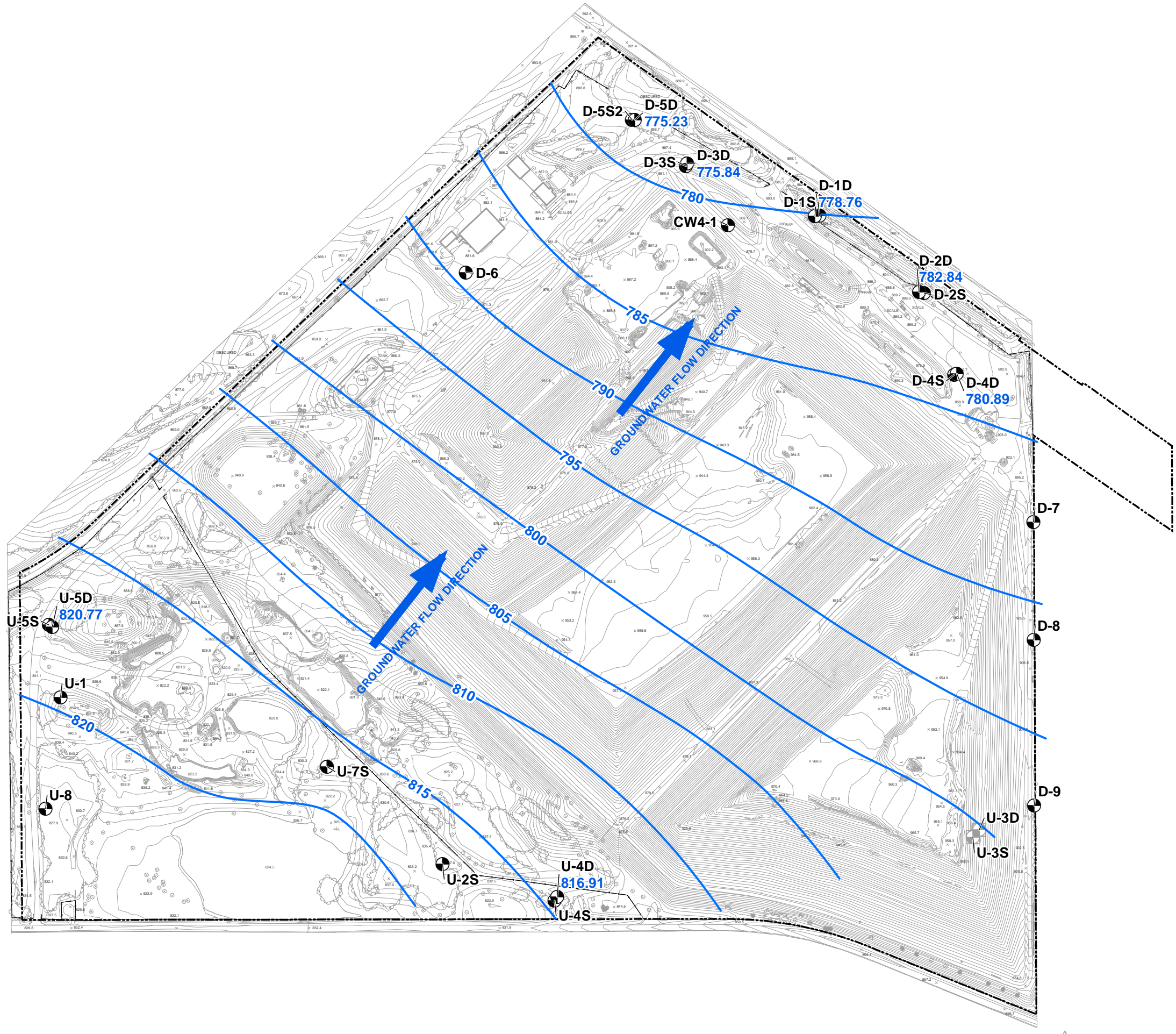


Scale In Feet (Approximate)




Groundwater & Environmental Services, Inc.





- Legend**
- GROUNDWATER ELEVATION ISOCONTOUR (ft MSL)
  - PROPERTY BOUNDARY
  - FENCE
  - 771.75** MEASURED GROUNDWATER ELEVATION (ft MSL)
  - MONITORING WELL
  - DESTROYED MONITORING WELL
  - ABANDONED MONITORING WELL

**POTENTIOMETRIC SURFACE CONTOUR MAP  
SEPTEMBER 5-6, 2017**

**SKB ENVIRONMENTAL INC.  
ROSEMOUNT FACILITY  
13425 COURTHOUSE BOULEVARD  
ROSEMOUNT, MINNESOTA**

Drawn JTL		Date 1-29-18
Designed DMC		Figure 8
Approved		

Scale In Feet (Approximate)



## Tables

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**Table 1**

**Groundwater Elevations  
 Downgradient Deep Wells**



DATE	D-1D	D-1VD	D-2D	D-2VD	D-3D	D-4D	D-5D
2/21/2017	776.80	775.92	780.86	780.61	773.86	778.86	773.37
3/21/2017	776.74	775.90	780.73	780.68	773.88	778.79	773.34
4/24/2017	777.01		781.00		774.17		773.66
4/25/2017						779.07	
5/15/2017					774.07		773.27
5/16/2017	777.10		781.16			779.14	
6/26/2017	777.63	776.77	781.63	781.57	774.62	779.71	774.02
7/25/2017	778.06				775.13		774.58
7/26/2017			782.08			780.09	
8/14/2017					775.49		774.98
8/15/2017	786.37		782.52			780.46	
9/5/2017					775.84		775.23
9/6/2017	778.76		782.84			780.89	



**Table 1**  
**Groundwater Elevations**  
**Downgradient Shallow Wells**



DATE	D-1S	D-2S	D-3S	D-4S	D-5S2	D-8	D-9
2/21/2017	776.70	780.80	775.28	770.63	781.49	798.00	804.99
3/21/2017	776.56	780.64	775.26	777.53	781.45	798.04	804.91
4/24/2017	777.01	781.11	775.75		781.72		
4/25/2017				777.98		798.55	805.14
5/15/2017			775.54		781.72		
5/16/2017	777.04	781.00		777.99		798.31	805.30
6/26/2017	777.56	781.52	776.06	778.45	782.09	798.91	806.03
7/25/2017	777.98		776.47		782.56		
7/26/2017		781.95		778.84		799.28	805.98
8/14/2017			776.92		782.92		
8/15/2017	778.26	782.68		779.27		799.90	806.58
9/5/2017			777.22		783.24		
9/6/2017	778.66	783.33		779.64		800.19	807.06

**Table 1**  
**Groundwater Elevations**  
**Upgradient Deep Wells**



DATE	U-2D	U-4D	U-5D	U-7D
2/21/2017	815.29	814.95	818.20	814.70
3/21/2017	815.08	814.68	817.98	814.50
4/24/2017		814.97	818.34	
5/15/2017		815.09	818.35	
6/26/2017	816.32	816.02	818.95	815.70
7/25/2017		816.41		
8/14/2017		816.68	819.95	
9/5/2017		816.91	820.77	

**Table 1**  
**Groundwater Elevations**  
**Upgradient Shallow Wells**



DATE	U-1	U-2S	U-4S	U-5S	U-7S
2/21/2017	819.21	821.79	821.02	818.52	817.30
3/21/2017	819.20	821.39	820.73	818.57	815.88
4/24/2017			821.18	818.79	
5/15/2017			821.20	819.09	
6/26/2017	820.91	822.44	821.98	820.51	819.85
7/25/2017			822.91		
8/14/2017			822.73	821.39	
9/5/2017			822.84	821.63	

Table 2



Well Stabilization Data

Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-1D	2/21/17 11:05 AM	1	8.81	779	10.99
D-1D	2/21/17 11:26 AM	1	8.63	771	11.01
D-1D	2/21/17 11:30 AM	1	8.81	780	10.94
D-1D	2/21/17 11:35 AM	1	8.84	778	10.94
D-1D	2/21/17 11:40 AM	1	8.8	776	10.97
D-1D	2/21/17 11:45 AM	1	8.79	776	10.96
D-1D	4/24/17 2:30 PM	1	8.12	799	11.48
D-1D	4/24/17 2:35 PM	1	8.05	801	11.36
D-1D	4/24/17 2:40 PM	1	8.05	802	11.35
D-1D	4/24/17 2:45 PM	1	8.05	802	11.37
D-1D	4/24/17 2:50 PM	1	8.05	802	11.38
D-1D	5/16/17 8:20 AM	1	7.82	764	11.67
D-1D	5/16/17 8:25 AM	1	7.8	765	11.65
D-1D	5/16/17 8:30 AM	1	7.8	765	11.64
D-1D	5/16/17 8:35 AM	1	7.8	765	11.63
D-1D	5/16/17 8:40 AM	1	7.79	765	11.63
D-1D	6/27/17 2:00 PM	1	8.03	745	12.47
D-1D	6/27/17 2:20 PM	1	7.95	779	11.85
D-1D	6/27/17 2:40 PM	1	7.99	790	11.62
D-1D	6/27/17 3:00 PM	1	7.9	789	11.49
D-1D	6/27/17 3:20 PM	1	7.99	794	11.44
D-1D	6/27/17 3:30 PM	1	7.99	796	11.44
D-1D	6/27/17 3:35 PM		7.93	795	11.5
D-1D	7/25/17 2:40 PM	1	7.85	763	12.07
D-1D	7/25/17 2:50 PM	1	7.8	783	11.17
D-1D	7/25/17 3:00 PM	1	7.77	784	11.16
D-1D	7/25/17 3:10 PM	1	7.74	784	11.15
D-1D	8/15/17 8:50 AM	1	7.87	737	11.86
D-1D	8/15/17 9:00 AM	1	7.77	745	11.57
D-1D	8/15/17 9:10 AM	1	7.75	743	11.47
D-1D	8/15/17 9:20 AM	1	7.78	746	11.46
D-1D	9/6/17 8:10 AM	1	7.61	750	11.54
D-1D	9/6/17 8:20 AM	1	7.49	758	11.28
D-1D	9/6/17 8:30 AM	1	7.46	758	11.25
D-1D	9/6/17 8:40 AM	1	7.46	758	11.24
D-1S	2/21/17 11:01 AM	1	8.91	684	9.51
D-1S	2/21/17 11:03 AM	1	8.62	823	11.05
D-1S	2/21/17 11:06 AM	1	8.66	824	11.16
D-1S	2/21/17 11:09 AM	1	8.66	822	11.19
D-1S	3/22/17 1:00 PM	1	7.6	812	9.4
D-1S	3/22/17 1:05 PM	1	7.37	834	10.52
D-1S	3/22/17 1:10 PM	1	7.33	835	10.84
D-1S	3/22/17 1:15 PM	1	7.34	832	10.97
D-1S	3/22/17 1:20 PM		7.34	830	11.02
D-1S	4/24/17 2:30 PM	1	7.95	833	14.86
D-1S	4/24/17 2:32 PM	1	7.47	844	12.59
D-1S	4/24/17 2:36 PM	1	7.37	841	12.41
D-1S	4/24/17 2:39 PM	1	7.32	842	12.4

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-1S	5/16/17 8:20 AM	1	8.14	708	16.54
D-1S	5/16/17 8:23 AM	1	7.69	744	15.73
D-1S	5/16/17 8:26 AM	1	7.57	748	15.57
D-1S	5/16/17 8:29 AM	1	7.57	748	15.54
D-1S	6/27/17 1:20 PM	1	7.54	792	13.32
D-1S	6/27/17 1:25 PM	1	7.52	825	13.04
D-1S	6/27/17 1:30 PM	1	7.5	833	12.53
D-1S	6/27/17 1:40 PM	1	7.48	841	12.34
D-1S	6/27/17 1:45 PM		7.52	841	12.31
D-1S	7/25/17 2:20 PM	1	7.74	784	14.85
D-1S	7/25/17 2:22 PM	1	7.6	70	13.51
D-1S	7/25/17 2:24 PM	1	7.49	830	12.62
D-1S	7/25/17 2:25 PM	1	7.35	838	12.59
D-1S	8/15/17 8:40 AM	1	7.55	790	13.54
D-1S	8/15/17 8:42 AM	1	7.33	810	11.95
D-1S	8/15/17 8:44 AM	1	7.28	808	11.85
D-1S	8/15/17 8:45 AM	1	7.29	812	11.83
D-1S	9/6/17 7:55 AM	1	7.09	797	11.53
D-1S	9/6/17 7:57 AM	1	7.1	835	11.39
D-1S	9/6/17 7:59 AM	1	7.01	840	11.38
D-1S	9/6/17 8:00 AM	1	7.01	840	11.38
D-1S	10/24/17 9:10 AM	1	7.42	828	8.09
D-1S	10/24/17 9:20 AM	1	7.41	891	10.85
D-1S	10/24/17 9:30 AM	1	7.36	889	10.52
D-1S	10/24/17 9:40 AM	1	7.33	878	10.72
D-1S	10/24/17 9:45 AM		7.3	877	10.68
D-2D	2/21/17 1:11 PM	1	8.72	732	10.81
D-2D	2/21/17 1:20 PM	1	8.89	769	10.32
D-2D	2/21/17 1:30 PM	1	8.92	773	10.28
D-2D	2/21/17 1:40 PM	1	8.91	774	10.26
D-2D	4/24/17 3:30 PM	1	7.89	793	10.56
D-2D	4/24/17 3:35 PM	1	7.89	792	10.6
D-2D	4/24/17 3:40 PM	1	7.89	792	10.57
D-2D	4/24/17 3:45 PM	1	7.9	792	10.53
D-2D	5/16/17 9:25 AM	1	7.68	770	10.01
D-2D	5/16/17 9:30 AM	1	7.68	770	10.01
D-2D	5/16/17 9:35 AM	1	7.68	759	10.02
D-2D	5/16/17 9:40 AM	1	7.68	759	10.47
D-2D	6/28/17 8:55 AM	1	7.82	770	10.45
D-2D	6/28/17 9:13 AM	1	7.86	776	10.31
D-2D	6/28/17 9:30 AM	1	7.82	776	10.31
D-2D	6/28/17 9:48 AM	1	7.83	776	10.3
D-2D	6/28/17 10:00 AM	1	7.87	777	10.31
D-2D	6/28/17 10:10 AM	1	7.82	778	10.22
D-2D	6/28/17 10:15 AM		7.84	778	10.22
D-2D	7/26/17 8:10 AM	1	7.67	763	10.24
D-2D	7/26/17 8:20 AM	1	7.69	766	9.44
D-2D	7/26/17 8:30 AM	1	7.71	768	10.06

**Table 2**  
**Well Stabilization Data**



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-2D	7/26/17 8:40 AM	1	7.7	770	10.04
D-2D	8/15/17 9:45 AM	1	7.66	730	10.77
D-2D	8/15/17 9:55 AM	1	7.66	733	10.76
D-2D	8/15/17 10:05 AM	1	7.66	733	10.75
D-2D	8/15/17 10:15 AM	1	7.65	733	10.75
D-2D	9/6/17 8:50 AM	1	7.41	742	10.42
D-2D	9/6/17 9:00 AM	1	7.4	742	10.46
D-2D	9/6/17 9:10 AM	1	7.4	743	10.45
D-2D	9/6/17 9:20 AM	1	7.4	743	10.48
D-2S	2/21/17 12:46 PM	1	8.98	783	11.55
D-2S	2/21/17 12:48 PM	1	8.83	824	11.47
D-2S	2/21/17 12:51 PM	1	8.72	836	10.91
D-2S	2/21/17 12:55 PM	1	8.78	823	10.88
D-2S	3/22/17 2:35 PM	1	7.99	821	9.43
D-2S	3/22/17 2:45 PM	1	7.51	851	10.09
D-2S	3/22/17 2:55 PM	1	7.52	834	10.13
D-2S	3/22/17 3:10 PM	1	7.53	827	10.15
D-2S	3/22/17 3:15 PM		7.53	827	10.14
D-2S	4/24/17 3:30 PM	1	7.41	826	13.39
D-2S	4/24/17 3:32 PM	1	7.49	856	11.58
D-2S	4/24/17 3:34 PM	1	7.44	845	11.27
D-2S	4/24/17 3:35 PM	1	7.37	840	11.15
D-2S	5/16/17 9:25 AM	1	7.86	817	12.44
D-2S	5/16/17 9:27 AM	1	7.64	824	11.64
D-2S	5/16/17 9:29 AM	1	7.58	829	11.23
D-2S	5/16/17 9:30 AM	1	7.55	832	10.89
D-2S	6/28/17 8:55 AM	1	7.72	798	15.35
D-2S	6/28/17 9:05 AM	1	7.62	842	11.57
D-2S	6/28/17 9:10 AM	1	7.59	832	11.18
D-2S	6/28/17 9:15 AM	1	7.67	828	11.27
D-2S	6/28/17 9:20 AM	1	7.71	826	11.16
D-2S	6/28/17 9:25 AM		7.63	820	11.1
D-2S	7/26/17 8:10 AM	1	8.14	746	15.31
D-2S	7/26/17 8:13 AM	1	7.59	819	10.9
D-2S	7/26/17 8:16 AM	1	7.61	832	10.66
D-2S	7/26/17 8:20 AM	1	7.58	832	10.68
D-2S	8/15/17 9:45 AM	1	7.4	788	12.72
D-2S	8/15/17 9:48 AM	1	7.42	785	11.37
D-2S	8/15/17 9:51 AM	1	7.46	795	11.33
D-2S	8/15/17 9:55 AM	1	7.43	796	11.39
D-2S	9/6/17 8:50 AM	1	7.34	808	11.4
D-2S	9/6/17 8:53 AM	1	7.2	810	10.89
D-2S	9/6/17 8:56 AM	1	7.19	811	10.84
D-2S	9/6/17 9:00 AM	1	7.19	809	10.86
D-2S	10/24/17 9:45 AM	1			
D-2S	10/24/17 9:55 AM		7.37	830	10.38
D-2S	10/24/17 10:40 AM	1	7.39	843	10.01
D-2S	10/24/17 10:50 AM	1	7.39	843	10.01

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-2S	10/24/17 11:00 AM	1	7.36	830	10.02
D-2S	10/24/17 11:10 AM	1	7.36	831	10.04
D-2S	10/24/17 11:15 AM		7.37	830	10.06
D-3D	2/21/17 9:46 AM	1	8.6	745	9.47
D-3D	2/21/17 9:50 AM	1	8.76	819	9.97
D-3D	2/21/17 9:55 AM	1	8.6	817	9.97
D-3D	2/21/17 10:00 AM	1	8.69	819	9.92
D-3D	2/21/17 10:05 AM	1	8.64	820	9.91
D-3D	2/21/17 10:10 AM	1	8.1	817	9.93
D-3D	4/24/17 1:25 PM	1	7.63	841	11.03
D-3D	4/24/17 1:30 PM	1	7.64	820	10.97
D-3D	4/24/17 1:35 PM	1	7.64	827	10.86
D-3D	4/24/17 1:40 PM	1	7.66	825	10.82
D-3D	5/15/17 12:55 PM	1	7.46	821	9.65
D-3D	5/15/17 1:00 PM	1	7.46	821	9.65
D-3D	5/15/17 1:05 PM	1	7.46	821	9.65
D-3D	5/15/17 1:10 PM	1	7.46	821	9.65
D-3D	6/27/17 10:00 AM	1	7.66	821	10.37
D-3D	6/27/17 10:15 AM	1	7.55	816	10.63
D-3D	6/27/17 10:30 AM	1	7.59	813	10.62
D-3D	6/27/17 10:45 AM	1	7.49	815	10.57
D-3D	6/27/17 11:00 AM	1	7.61	814	10.62
D-3D	6/27/17 11:10 AM	1	7.66	809	10.59
D-3D	6/27/17 11:15 AM		7.6	816	10.54
D-3D	7/25/17 1:10 PM	1	7.51	800	10.46
D-3D	7/25/17 1:20 PM	1	7.56	812	10.3
D-3D	7/25/17 1:30 PM	1	7.48	807	10.29
D-3D	7/25/17 1:40 PM	1	7.47	815	10.26
D-3D	8/14/17 2:10 PM	1	7.47	780	10.7
D-3D	8/14/17 2:20 PM	1	7.48	782	10.72
D-3D	8/14/17 2:30 PM	1	7.48	780	10.69
D-3D	8/14/17 2:40 PM	1	7.47	780	10.7
D-3D	9/5/17 12:25 PM	1	7.27	774	11.35
D-3D	9/5/17 12:35 PM	1	7.28	775	11.28
D-3D	9/5/17 12:45 PM	1	7.27	775	11.27
D-3D	9/5/17 12:55 PM	1	7.27	775	11.26
D-3S	2/21/17 9:16 AM	1	9	825	10.1
D-3S	2/21/17 9:20 AM	1	8.83	844	10.1
D-3S	2/21/17 9:25 AM	1	8.58	853	10.05
D-3S	2/21/17 9:30 AM	1	8.61	854	10.07
D-3S	3/22/17 11:20 AM	1	7.65	852	9.74
D-3S	3/22/17 11:30 AM	1	7.52	872	9.47
D-3S	3/22/17 11:40 AM	1	7.3	862	10.02
D-3S	3/22/17 11:50 AM	1	7.71	859	10.04
D-3S	3/22/17 11:55 AM		7.3	859	10.08
D-3S	4/24/17 1:25 PM	1	8.01	869	11.8
D-3S	4/24/17 1:27 PM	1	7.54	877	11.12
D-3S	4/24/17 1:29 PM	1	7.48	872	11.14

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-3S	4/24/17 1:30 PM	1	7.47	875	11.13
D-3S	5/15/17 11:55 AM	1	7.7	862	10.57
D-3S	5/15/17 11:57 AM	1	7.49	865	10.38
D-3S	5/15/17 11:59 AM	1	7.46	852	10.43
D-3S	5/15/17 12:00 PM	1	7.44	878	9.94
D-3S	6/27/17 10:00 AM	1	7.89	859	12.85
D-3S	6/27/17 10:15 AM	1	7.47	892	10.56
D-3S	6/27/17 10:30 AM	1	7.46	890	10.87
D-3S	6/27/17 10:40 AM	1	7.63	891	10.85
D-3S	6/27/17 10:45 AM	1	7.62	892	10.15
D-3S	7/25/17 1:10 PM	1	7.3	859	9
D-3S	7/25/17 1:13 PM	1	7.53	892	10.54
D-3S	7/25/17 1:16 PM	1	7.49	884	10.56
D-3S	7/25/17 1:20 PM	1	7.48	887	10.56
D-3S	8/14/17 2:10 PM	1	7.34	868	12.12
D-3S	8/14/17 2:13 PM	1	7.3	870	11.74
D-3S	8/14/17 2:16 PM	1	7.24	888	10.97
D-3S	8/14/17 2:20 PM	1	7.29	882	10.87
D-3S	9/5/17 12:25 PM	1	7.67	859	12.88
D-3S	9/5/17 12:28 PM	1	7.22	862	11.52
D-3S	9/5/17 12:31 PM	1	7.22	864	11.42
D-3S	9/5/17 12:35 PM	1	7.22	864	11.45
D-3S	10/23/17 4:15 PM	1	7.53	857	13.17
D-3S	10/23/17 4:30 PM	1	7.38	895	10.52
D-3S	10/23/17 4:45 PM	1	7.33	900	10.22
D-3S	10/23/17 5:00 PM	1	7.32	932	10.01
D-3S	10/23/17 5:05 PM	1	7.32	932	10.01
D-4D	2/21/17 2:21 PM	1	8.76	792	12.04
D-4D	2/21/17 2:25 PM	1	8.82	795	11.32
D-4D	2/21/17 2:30 PM	1	8.76	790	11.27
D-4D	2/21/17 2:35 PM	1	8.67	787	11.24
D-4D	2/21/17 2:40 PM	1	8.73	788	11.28
D-4D	4/25/17 9:30 AM	1	7.96	815	11.16
D-4D	4/25/17 9:35 AM	1	7.97	816	11.13
D-4D	4/25/17 9:40 AM	1	7.95	815	11.12
D-4D	4/25/17 9:45 AM	1	7.98	816	11.11
D-4D	5/16/17 10:20 AM	1	7.05	745	11.84
D-4D	5/16/17 10:25 AM	1	7.72	722	11.91
D-4D	5/16/17 10:30 AM	1	7.72	759	11.84
D-4D	5/16/17 10:35 AM	1	7.62	757	11.92
D-4D	6/28/17 11:05 AM	1	7.73	801	11.43
D-4D	6/28/17 11:20 AM	1	7.8	802	11.35
D-4D	6/28/17 11:35 AM	1	7.81	792	11.37
D-4D	6/28/17 11:50 AM	1	7.72	796	11.27
D-4D	6/28/17 11:55 AM	1	7.79	797	11.3
D-4D	6/28/17 12:00 PM	1	7.74	793	11.26
D-4D	7/26/17 9:05 AM	1	7.63	794	10.4
D-4D	7/26/17 9:15 AM	1	7.55	796	10.83



Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-4D	7/26/17 9:25 AM	1	7.54	787	10.82
D-4D	7/26/17 9:35 AM	1	7.57	787	10.82
D-4D	8/15/17 10:35 AM	1	7.5	781	11.37
D-4D	8/15/17 10:45 AM	1	7.53	780	11.38
D-4D	8/15/17 10:55 AM	1	7.52	780	11.38
D-4D	8/15/17 11:05 AM	1	7.51	780	11.39
D-4D	9/6/17 9:35 AM	1	7.36	771	11.4
D-4D	9/6/17 9:45 AM	1	7.35	770	11.38
D-4D	9/6/17 9:55 AM	1	7.35	770	11.39
D-4D	9/6/17 10:05 AM	1	7.35	771	11.38
D-4S	2/21/17 2:01 PM	1	8.96	784	12.09
D-4S	2/21/17 2:02 PM	1	8.73	820	11.75
D-4S	2/21/17 2:03 PM	1	8.76	819	11.73
D-4S	2/21/17 2:04 PM	1	8.79	820	11.63
D-4S	2/21/17 2:05 PM	1	8.78	818	11.65
D-4S	3/23/17 9:00 AM	1	8.05	798	10.36
D-4S	3/23/17 9:05 AM	1	7.63	818	11.09
D-4S	3/23/17 9:10 AM	1	7.62	820	11.05
D-4S	3/23/17 9:15 AM	1	7.63	820	11.04
D-4S	3/23/17 9:20 AM		7.63	821	11.03
D-4S	4/25/17 9:30 AM	1	8.04	806	12.82
D-4S	4/25/17 9:32 AM	1	7.7	832	11.75
D-4S	4/25/17 9:34 AM	1	7.64	836	11.45
D-4S	4/25/17 9:35 AM	1	7.58	838	11.32
D-4S	5/16/17 10:20 AM	1	7.82	778	12.05
D-4S	5/16/17 10:22 AM	1	7.69	817	11.5
D-4S	5/16/17 10:24 AM	1	7.63	815	11.52
D-4S	5/16/17 10:25 AM	1	7.59	814	11.38
D-4S	6/28/17 11:05 AM	1	8.09	7.88	12.56
D-4S	6/28/17 11:15 AM	1	7.66	817	11.67
D-4S	6/28/17 11:25 AM	1	7.67	818	11.54
D-4S	6/28/17 11:35 AM	1	7.66	822	11.5
D-4S	6/28/17 11:40 AM		7.73	821	11.49
D-4S	7/26/17 9:05 AM	1	7.88	800	11.83
D-4S	7/26/17 9:07 AM	1	7.6	814	10.97
D-4S	7/26/17 9:09 AM	1	7.52	815	10.94
D-4S	7/26/17 9:10 AM	1	7.56	815	10.96
D-4S	8/15/17 10:35 AM	1	7.57	779	11.81
D-4S	8/15/17 10:37 AM	1	7.57	774	11.82
D-4S	8/15/17 10:39 AM	1	7.53	778	11.85
D-4S	8/15/17 10:40 AM	1	7.55	780	11.78
D-4S	9/6/17 9:35 AM	1	7.76	788	11.95
D-4S	9/6/17 9:37 AM	1	7.32	784	11.51
D-4S	9/6/17 9:39 AM	1	7.31	784	11.48
D-4S	9/6/17 9:40 AM	1	7.31	784	11.47
D-4S	10/24/17 11:35 AM	1	7.52	768	10.98
D-4S	10/24/17 11:45 AM	1	7.38	806	10.6
D-4S	10/24/17 11:55 AM	1	7.37	809	10.59

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-4S	10/24/17 12:04 PM	1	7.35	809	10.59
D-4S	10/24/17 12:05 PM		7.35	809	10.6
D-5D	2/21/17 8:40 AM	1	9	811	8.52
D-5D	2/21/17 8:45 AM	1	8.93	799	9.57
D-5D	2/21/17 8:50 AM	1	8.99	809	9.53
D-5D	2/21/17 8:55 AM	1	8.92	810	9.59
D-5D	2/21/17 9:00 AM	1	8.92	814	9.59
D-5D	4/24/17 12:40 PM	1	7.58	745	12.62
D-5D	4/24/17 12:45 PM	1	7.56	797	11.35
D-5D	4/24/17 12:50 PM	1	7.58	792	11.35
D-5D	4/24/17 12:55 PM	1	7.54	793	11.34
D-5D	4/24/17 1:00 PM	1	7.54	794	11.33
D-5D	5/15/17 11:55 AM	1	7.53	747	12.4
D-5D	5/15/17 11:57 AM	1	7.5	762	11.5
D-5D	5/15/17 11:59 AM	1	7.5	758	11.86
D-5D	5/15/17 12:00 PM	1	7.52	765	11.82
D-5D	5/15/17 12:05 PM	1	7.51	777	10.68
D-5D	6/27/17 7:35 AM	1	7.7	801	10.18
D-5D	6/27/17 8:05 AM	1	7.68	803	10.16
D-5D	6/27/17 8:30 AM	1	7.64	806	10.09
D-5D	6/27/17 9:00 AM	1	7.62	800	10.1
D-5D	6/27/17 9:30 AM	1	7.62	814	10.14
D-5D	6/27/17 9:35 AM		7.65	799	10.14
D-5D	7/25/17 11:25 AM	1	7.5	788	10.78
D-5D	7/25/17 11:40 AM	1	7.51	789	10.64
D-5D	7/25/17 11:55 AM	1	7.52	788	10.4
D-5D	7/25/17 12:10 PM	1	7.49	788	10.42
D-5D	8/14/17 1:15 PM	1	7.49	764	10.6
D-5D	8/14/17 1:30 PM	1	7.48	765	10.62
D-5D	8/14/17 1:45 PM	1	7.48	763	10.6
D-5D	8/14/17 2:00 PM	1	7.48	760	10.62
D-5D	9/5/17 11:25 AM	1	7.33	769	10.92
D-5D	9/5/17 11:40 AM	1	7.3	771	10.91
D-5D	9/5/17 11:55 AM	1	7.27	771	10.83
D-5D	9/5/17 12:10 PM	1	7.27	771	10.81
D-5S2	2/21/17 7:51 AM	1	11.7	817	8.45
D-5S2	2/21/17 7:52 AM	1	1.32	902	9.01
D-5S2	2/21/17 7:55 AM	1	10.77	927	9.52
D-5S2	2/21/17 7:57 AM	1	9.11	920	9.76
D-5S2	2/21/17 8:00 AM	1	9.44	920	9.75
D-5S2	3/22/17 9:00 AM	1	9.92	912	9.13
D-5S2	3/22/17 9:05 AM	1	9.7	938	9.74
D-5S2	3/22/17 9:10 AM	1	9.67	936	9.83
D-5S2	3/22/17 9:15 AM	1	9.71	936	9.83
D-5S2	3/22/17 9:20 AM		9.72	936	9.83
D-5S2	4/24/17 12:40 PM	1	7.63	876	11.91
D-5S2	4/24/17 12:42 PM	1	7.3	952	11.1
D-5S2	4/24/17 12:44 PM	1	7.35	958	10.91

Table 2



Well Stabilization Data

Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-5S2	4/24/17 12:45 PM	1	7.4	960	10.85
D-5S2	5/15/17 11:55 AM	1	7.73	843	13.78
D-5S2	5/15/17 11:57 AM	1	7.54	898	12.35
D-5S2	5/15/17 11:59 AM	1	7.42	916	11.73
D-5S2	5/15/17 12:00 PM	1	7.38	921	11.52
D-5S2	6/27/17 7:35 AM	1	7.57	888	10.72
D-5S2	6/27/17 7:40 AM	1	7.39	975	10.04
D-5S2	6/27/17 7:45 AM	1	7.52	974	10.02
D-5S2	6/27/17 7:50 AM	1	7.4	975	10
D-5S2	6/27/17 7:55 AM		7.49	974	10.01
D-5S2	7/25/17 11:25 AM	1	7.54	942	11.24
D-5S2	7/25/17 11:27 AM	1	7.4	962	10.15
D-5S2	7/25/17 11:29 AM	1	7.43	962	9.98
D-5S2	7/25/17 11:30 AM	1	7.44	962	9.96
D-5S2	8/14/17 1:15 PM	1	7.32	881	12.33
D-5S2	8/14/17 1:17 PM	1	7.34	922	10.97
D-5S2	8/14/17 1:19 PM	1	7.33	929	10.54
D-5S2	8/14/17 1:20 PM	1	7.27	929	10.54
D-5S2	9/5/17 11:25 AM	1	7.43	877	12.8
D-5S2	9/5/17 11:27 AM	1	7.14	942	10.69
D-5S2	9/5/17 11:29 AM	1	7.16	942	10.65
D-5S2	9/5/17 11:30 AM	1	7.16	943	10.64
D-5S2	10/24/17 9:55 AM	1	7.35	936	9.63
D-5S2	10/24/17 10:05 AM	1	7.35	1030	9.57
D-5S2	10/24/17 10:15 AM	1	7.33	1030	9.5
D-5S2	10/24/17 10:25 AM	1	7.36	1020	9.55
D-5S2	10/24/17 10:30 AM		7.36	1020	9.55
D-7	10/24/17 8:00 AM	1	7.77	1070	7.77
D-7	10/24/17 8:05 AM	1	7.78	1070	7.78
D-7	10/24/17 8:10 AM	1	7.78	1070	7.79
D-7	10/24/17 8:15 AM	1	7.77	7070	7.8
D-7	10/24/17 8:20 AM		7.77	1070	7.81
D-8	2/22/17 8:26 AM	1	9.55	605	8.18
D-8	2/22/17 8:30 AM	1	9.55	698	9.87
D-8	2/22/17 8:35 AM	1	9.51	691	9.82
D-8	2/22/17 8:40 AM	1	9.5	679	9.82
D-8	3/23/17 10:10 AM	1	8.31	655	7.86
D-8	3/23/17 10:25 AM	1	8.38	622	9.74
D-8	3/23/17 10:45 AM	1	8.12	658	9.79
D-8	3/23/17 11:05 AM	1	8.09	671	9.8
D-8	3/23/17 11:10 AM		8.1	672	9.8
D-8	4/25/17 10:00 AM	1	8.45	693	10.85
D-8	4/25/17 10:05 AM	1	8.68	699	10.82
D-8	4/25/17 10:10 AM	1	8.78	689	10.35
D-8	4/25/17 10:15 AM	1	8.77	690	10.26
D-8	5/16/17 11:05 AM	1	8.11	650	11.98
D-8	5/16/17 11:10 AM	1	8.01	722	10.6
D-8	5/16/17 11:15 AM	1	8.01	722	10.46

Table 2



Well Stabilization Data

Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-8	5/16/17 11:20 AM	1	7.99	714	10.3
D-8	6/28/17 12:30 PM	1	8.23	675	13.71
D-8	6/28/17 12:35 PM	1	8.19	730	10.79
D-8	6/28/17 12:43 PM	1	8.09	709	10.51
D-8	6/28/17 12:50 PM	1	8.19	710	10.71
D-8	6/28/17 1:00 PM	1	8.05	720	10.51
D-8	6/28/17 1:05 PM		8.05	721	10.53
D-8	7/26/17 9:45 AM	1	8.09	643	14.65
D-8	7/26/17 9:48 AM	1	8	641	11.57
D-8	7/26/17 9:51 AM	1	8.12	641	9.77
D-8	7/26/17 9:55 AM	1	8.16	641	9.79
D-8	8/15/17 11:20 AM	1	8.1	607	15.34
D-8	8/15/17 11:23 AM	1	8.07	594	10.59
D-8	8/15/17 11:26 AM	1	8.04	592	10.57
D-8	8/15/17 11:30 AM	1	8.05	592	10.57
D-8	9/6/17 10:10 AM	1	8	574	12.59
D-8	9/6/17 10:13 AM	1	8.03	557	12.32
D-8	9/6/17 10:16 AM	1	8.17	564	11.64
D-8	9/6/17 10:20 AM	1	8.16	565	11.35
D-8	10/24/17 12:15 PM	1	7.66	575	10.5
D-8	10/24/17 12:25 PM	1	7.57	752	9.51
D-8	10/24/17 12:35 PM	1	7.6	702	9.5
D-8	10/24/17 12:45 PM	1	7.57	715	9.47
D-8	10/24/17 12:50 PM		7.61	719	9.47
D-9	2/22/17 9:06 AM	1	9.37	701	8.82
D-9	2/22/17 9:10 AM	1	8.96	840	9.95
D-9	2/22/17 9:15 AM	1	8.87	823	9.95
D-9	2/22/17 9:20 AM	1	8.82	834	9.98
D-9	3/23/17 11:25 AM	1	8.23	754	7.72
D-9	3/23/17 11:40 AM	1	7.71	805	9.57
D-9	3/23/17 11:55 AM	1	7.87	811	9.01
D-9	3/23/17 12:10 PM	1	7.97	815	9.7
D-9	3/23/17 12:25 PM	1	7.97	817	9.66
D-9	3/23/17 12:30 PM		7.97	817	9.66
D-9	4/25/17 10:05 AM	1	8.29	850	10.63
D-9	4/25/17 10:10 AM	1	8.48	833	10.65
D-9	4/25/17 10:15 AM	1	8.49	835	10.6
D-9	4/25/17 10:45 AM	1	8.56	839	10.58
D-9	5/16/17 11:35 AM	1	7.92	505	11.1
D-9	5/16/17 11:40 AM	1	7.65	827	10.64
D-9	5/16/17 11:45 AM	1	7.51	802	10.54
D-9	5/16/17 11:50 AM	1	7.49	798	10.48
D-9	6/28/17 1:30 PM	1	8.07	747	13.62
D-9	6/28/17 1:45 PM	1	7.63	822	12.15
D-9	6/28/17 2:00 PM	1	7.83	812	12.25
D-9	6/28/17 2:20 PM	1	7.9	816	12.42
D-9	6/28/17 2:25 PM		7.82	822	12.22
D-9	7/26/17 10:25 AM	1	7.8	788	12.73

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
D-9	7/26/17 10:30 AM	1	7.54	808	11.64
D-9	7/26/17 10:35 AM	1	7.54	797	11.4
D-9	7/26/17 10:40 AM	1	7.55	783	11.24
D-9	8/15/17 11:55 AM	1	7.81	770	12.84
D-9	8/15/17 12:00 PM	1	7.55	794	12.22
D-9	8/15/17 12:05 PM	1	7.66	740	11.84
D-9	8/15/17 12:10 PM	1	7.62	748	11.87
D-9	9/6/17 10:35 AM	1	7.7	750	12.52
D-9	9/6/17 10:38 AM	1	7.38	726	1.8
D-9	9/6/17 10:41 AM	1	7.43	718	11.74
D-9	9/6/17 10:45 AM	1	7.43	710	11.75
D-9	10/24/17 1:10 PM	1	7.49	752	11.03
D-9	10/24/17 1:20 PM	1	7.44	789	10.61
D-9	10/24/17 1:30 PM	1	7.37	725	10.76
D-9	10/24/17 1:40 PM	1	7.38	744	10.82
D-9	10/24/17 1:50 PM	1	7.39	744	10.92
D-9	10/24/17 1:55 PM		7.39	743	10.93
U-4D	2/22/17 11:41 AM	1	8.89	690	10.84
U-4D	2/22/17 11:50 AM	1	8.86	799	9.66
U-4D	2/22/17 12:00 PM	1	8.82	801	9.56
U-4D	2/22/17 12:10 PM	1	8.81	802	9.53
U-4D	2/22/17 12:20 PM	1	8.79	803	9.54
U-4D	3/21/17 11:30 AM	1	7.63	802	8.16
U-4D	3/21/17 11:45 AM	1	7.84	794	9.29
U-4D	3/21/17 12:00 PM	1	7.86	794	9.3
U-4D	3/21/17 12:15 PM	1	7.88	794	9.32
U-4D	3/21/17 12:30 PM	1	8.07	794	9.29
U-4D	3/21/17 12:45 PM	1	8.09	795	9.32
U-4D	3/21/17 1:00 PM	1	8.29	795	9.33
U-4D	3/21/17 1:15 PM	1	8.3	795	9.34
U-4D	3/21/17 1:20 PM		8.3	783	9.32
U-4D	4/24/17 10:40 AM	1	7.38	816	10.12
U-4D	4/24/17 10:45 AM	1	7.35	817	9.61
U-4D	4/24/17 10:50 AM	1	7.32	816	9.81
U-4D	4/24/17 10:55 AM	1	7.31	816	9.6
U-4D	4/24/17 11:00 AM	1	7.3	815	9.6
U-4D	5/15/17 9:55 AM	1	7.62	776	10.57
U-4D	5/15/17 10:00 AM	1	7.61	807	9.17
U-4D	5/15/17 10:05 AM	1	7.6	770	10.4
U-4D	5/15/17 10:10 AM	1	7.59	781	10.1
U-4D	5/15/17 10:15 AM	1	7.58	786	9.82
U-4D	6/26/17 11:35 AM	1	7.62	795	10.22
U-4D	6/26/17 12:00 PM	1	7.61	801	7.49
U-4D	6/26/17 12:30 PM	1	7.59	802	9.4
U-4D	6/26/17 12:40 PM	1	7.6	803	9.46
U-4D	6/26/17 12:45 PM	1	7.58	803	9.41
U-4D	6/26/17 12:50 PM		7.61	803	9.45
U-4D	7/25/17 9:15 AM	1	7.56	801	10.94

Table 2

Well Stabilization Data



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
U-4D	7/25/17 9:20 AM	1	7.68	788	9.51
U-4D	7/25/17 9:25 AM	1	7.67	787	9.21
U-4D	7/25/17 9:30 AM	1	7.66	787	9.13
U-4D	8/14/17 10:50 AM	1	7.48	774	10.35
U-4D	8/14/17 10:55 AM	1	7.52	764	9.69
U-4D	8/14/17 11:00 AM	1	7.41	763	9.59
U-4D	8/14/17 11:05 AM	1	7.46	763	9.58
U-4D	9/5/17 9:15 AM	1	7.48	768	9.69
U-4D	9/5/17 9:20 AM	1	7.8	767	9.55
U-4D	9/5/17 9:25 AM	1	7.16	768	9.62
U-4D	9/5/17 9:30 AM	1	7.16	768	9.62
U-4D	10/23/17 12:10 PM	1	7.48	763	9.01
U-4D	10/23/17 12:30 PM	1	7.49	770	9.03
U-4D	10/23/17 12:50 PM	1	7.47	771	9.01
U-4D	10/23/17 1:10 PM	1	7.44	773	8.94
U-4D	10/23/17 1:20 PM	1	7.47	778	8.93
U-4D	10/23/17 1:25 PM		7.4	778	8.93
U-4S	2/22/17 11:16 AM	1	9.03	792	10.14
U-4S	2/22/17 11:20 AM	1	8.8	769	9.86
U-4S	2/22/17 11:25 AM	1	8.72	769	9.82
U-4S	2/22/17 11:30 AM	1	8.72	769	9.82
U-4S	3/21/17 11:30 AM	1	7.76	1060	8.75
U-4S	3/21/17 11:40 AM	1	7.25	804	9.57
U-4S	3/21/17 11:50 AM	1	7.41	786	9.59
U-4S	3/21/17 12:00 PM	1	7.49	786	9.59
U-4S	3/21/17 12:05 PM		7.52	786	9.59
U-4S	4/24/17 10:40 AM	1	7.53	1140	12.27
U-4S	4/24/17 10:42 AM	1	7.01	833	9.79
U-4S	4/24/17 10:44 AM	1	6.92	831	9.71
U-4S	4/24/17 10:45 AM	1	6.93	824	9.71
U-4S	5/15/17 9:55 AM	1	8.56	837	12.68
U-4S	5/15/17 9:57 AM	1	7.78	850	9.55
U-4S	5/15/17 9:59 AM	1	7.59	847	9.38
U-4S	5/15/17 10:00 AM	1	7.57	848	9.28
U-4S	6/26/17 11:35 AM	1	7.48	851	9.79
U-4S	6/26/17 11:38 AM	1	7.4	854	9.51
U-4S	6/26/17 11:42 AM	1	7.34	851	9.45
U-4S	6/26/17 11:47 AM	1	7.5	856	9.39
U-4S	6/26/17 11:50 AM	1	7.5	855	9.38
U-4S	6/26/17 11:52 AM	1	7.53	855	9.36
U-4S	6/26/17 11:55 AM		7.55	855	9.37
U-4S	7/25/17 9:15 AM	1	7.91	825	11.32
U-4S	7/25/17 9:17 AM	1	7.73	829	10.15
U-4S	7/25/17 9:19 AM	1	7.66	832	9.71
U-4S	7/25/17 9:20 AM	1	7.59	836	9.44
U-4S	8/14/17 10:50 AM	1	7.6	825	12.61
U-4S	8/14/17 10:52 AM	1	7.32	843	10.26
U-4S	8/14/17 10:54 AM	1	7.52	845	10.13

Table 2



Well Stabilization Data

Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
U-4S	8/14/17 10:55 AM	1	7.3	844	10.12
U-4S	9/5/17 9:15 AM	1	7.21	860	10.98
U-4S	9/5/17 9:17 AM	1	7.22	850	10.17
U-4S	9/5/17 9:19 AM	1	7.21	855	9.99
U-4S	9/5/17 9:20 AM	1	7.21	856	9.98
U-4S	10/23/17 12:10 PM	1	7.39	765	10.8
U-4S	10/23/17 12:15 PM	1	7.45	791	9.62
U-4S	10/23/17 12:20 PM	1	7.42	802	9.47
U-4S	10/23/17 12:25 PM	1	7.39	808	9.41
U-4S	10/23/17 12:30 PM	1	7.38	809	9.49
U-4S	10/23/17 12:35 PM		7.38	809	9.5
U-5D	2/22/17 1:11 PM	1	8.81	772	10.63
U-5D	2/22/17 1:20 PM	1	8.88	772	10.62
U-5D	2/22/17 1:30 PM	1	8.84	772	10.61
U-5D	2/22/17 1:40 PM	1	8.91	772	10.61
U-5D	2/22/17 1:50 PM	1	8.9	772	10.54
U-5D	3/21/17 2:15 PM	1	8.87	736	7.68
U-5D	3/21/17 2:27 PM	1	8.92	757	9.63
U-5D	3/21/17 2:40 PM	1	9.1	758	9.64
U-5D	3/21/17 2:52 PM	1	9.15	759	9.65
U-5D	3/21/17 3:04 PM	1	9.2	759	9.65
U-5D	3/21/17 3:16 PM	1	9.222	759	9.68
U-5D	3/21/17 3:28 PM	1	9.28	759	9.74
U-5D	3/21/17 3:40 PM	1	9.34	760	9.75
U-5D	3/21/17 3:45 PM		9.34	760	9.76
U-5D	4/24/17 11:35 AM	1	7.75	413	10.62
U-5D	4/24/17 11:40 AM	1	7.75	410	10.63
U-5D	4/24/17 11:45 AM	1	7.75	410	10.64
U-5D	4/24/17 11:50 AM	1	7.75	411	10.63
U-5D	5/15/17 11:00 AM	1	7.63	772	9.78
U-5D	5/15/17 11:05 AM	1	7.63	772	9.78
U-5D	5/15/17 11:10 AM	1	7.63	772	9.79
U-5D	5/15/17 11:15 AM	1	7.63	772	9.78
U-5D	6/26/17 1:40 PM	1	7.87	769	10.13
U-5D	6/26/17 2:00 PM	1	7.85	753	9.96
U-5D	6/26/17 2:20 PM	1	7.45	765	10.62
U-5D	6/26/17 2:40 PM	1	7.44	763	10.46
U-5D	6/26/17 2:50 PM	1	7.5	764	10.46
U-5D	6/26/17 2:55 PM		7.5	765	10.4
U-5D	7/25/17 10:20 AM	1	7.59	758	8.54
U-5D	7/25/17 10:25 AM	1	7.61	755	10.58
U-5D	7/25/17 10:30 AM	1	7.6	755	10.57
U-5D	7/25/17 10:35 AM	1	7.61	756	10.54
U-5D	8/14/17 11:45 AM	1	7.58	729	10.37
U-5D	8/14/17 11:50 AM	1	7.58	729	10.38
U-5D	8/14/17 11:55 AM	1	7.58	729	10.38
U-5D	8/14/17 12:00 PM	1	7.58	729	10.37
U-5D	9/5/17 10:15 AM	1	7.56	732	10.2

Table 2



Well Stabilization Data

Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
U-5D	9/5/17 10:20 AM	1	7.55	732	10.23
U-5D	9/5/17 10:25 AM	1	7.56	732	10.24
U-5D	9/5/17 10:30 AM	1	7.56	733	10.23
U-5D	10/23/17 2:15 PM	1	7.38	737	10.19
U-5D	10/23/17 2:25 PM	1	7.39	736	10.2
U-5D	10/23/17 2:35 PM	1	7.38	737	10.22
U-5D	10/23/17 2:45 PM	1	7.38	736	10.23
U-5D	10/23/17 2:50 PM	1	7.39	736	10.23
U-5D	10/23/17 2:55 PM		7.39	737	10.27
U-5S	2/22/17 12:46 PM	1	8.83	732	11.26
U-5S	2/22/17 12:47 PM	1	8.68	809	11.1
U-5S	2/22/17 12:49 PM	1	8.65	807	11.12
U-5S	2/22/17 12:51 PM	1	8.65	807	11.12
U-5S	2/22/17 12:53 PM	1	8.66	803	11.12
U-5S	3/21/17 2:15 PM	1	9.12	794	10.65
U-5S	3/21/17 2:20 PM	1	8.74	800	11.04
U-5S	3/21/17 2:25 PM	1	8.72	800	11.04
U-5S	3/21/17 2:30 PM	1	8.73	799	11.04
U-5S	3/21/17 2:35 PM		8.73	7.99	11.05
U-5S	4/24/17 11:35 AM	1	7.75	828	12.25
U-5S	4/24/17 11:37 AM	1	7.31	829	10.82
U-5S	4/24/17 11:39 AM	1	7.31	823	10.84
U-5S	4/24/17 11:40 AM	1	7.32	823	10.83
U-5S	5/15/17 11:00 AM	1	7.79	775	10.93
U-5S	5/15/17 11:02 AM	1	7.51	790	11.3
U-5S	5/15/17 11:04 AM	1	7.47	788	11.21
U-5S	5/15/17 11:05 AM	1	7.45	784	11.18
U-5S	6/26/17 1:40 PM	1	7.55	1050	10.47
U-5S	6/26/17 1:43 PM	1	7.41	1070	10.25
U-5S	6/26/17 1:46 PM	1	7.45	1090	10.16
U-5S	6/26/17 1:49 PM	1	7.49	1110	10.13
U-5S	6/26/17 1:52 PM	1	7.41	1112	10.17
U-5S	6/26/17 1:55 PM		7.42	1120	10.14
U-5S	7/25/17 10:20 AM	1	7.6	180	11.04
U-5S	7/25/17 10:22 AM	1	7.45	883	9.71
U-5S	7/25/17 10:24 AM	1	7.45	884	9.7
U-5S	7/25/17 10:25 AM	1	7.49	885	9.7
U-5S	8/14/17 11:45 AM	1	7.3	783	10.55
U-5S	8/14/17 11:47 AM	1	7.34	791	10.49
U-5S	8/14/17 11:49 AM	1	7.37	790	10.45
U-5S	8/14/17 11:50 AM	1	7.37	790	10.44
U-5S	9/5/17 10:15 AM	1	7.37	807	11.41
U-5S	9/5/17 10:17 AM	1	7.24	808	10.46
U-5S	9/5/17 10:19 AM	1	7.24	808	10.37
U-5S	9/5/17 10:20 AM	1	7.26	800	10.34
U-5S	10/23/17 2:15 PM	1	6.92	765	11.8
U-5S	10/23/17 2:20 PM	1	7.16	860	10.17
U-5S	10/23/17 2:25 PM	1	7.2	857	10.09



**Table 2**  
**Well Stabilization Data**



Well ID	Measurement Date	Purge Rate l/min	Field pH	Field Specific Conductivity umhos/cm	Field Temp deg c
U-5S	10/23/17 2:30 PM	1	7.28	851	10.07
U-5S	10/23/17 2:35 PM	1	7.29	851	10.02
U-5S	10/23/17 2:40 PM		7.31	850	10.07

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1D	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1D	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1D	02/21/2017	Barium	0.050	mg/l	7440-39-3
D-1D	03/22/2017	Barium	0.049	mg/l	7440-39-3
D-1D	04/24/2017	Barium	0.051	mg/l	7440-39-3
D-1D	05/16/2017	Barium	0.050	mg/l	7440-39-3
D-1D	06/27/2017	Barium	0.049	mg/l	7440-39-3
D-1D	07/25/2017	Barium	0.050	mg/l	7440-39-3
D-1D	08/15/2017	Barium	0.051	mg/l	7440-39-3
D-1D	09/06/2017	Barium	0.050	mg/l	7440-39-3
D-1D	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1D	02/21/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	03/22/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	05/16/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	06/27/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	07/25/2017	Boron	< 0.020	mg/l	7440-42-8
D-1D	08/15/2017	Boron	0.020	mg/l	7440-42-8
D-1D	09/06/2017	Boron	0.022	mg/l	7440-42-8
D-1D	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1D	02/21/2017	Calcium	89.9	mg/l	7440-70-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1D	03/22/2017	Calcium	89.1	mg/l	7440-70-2
D-1D	04/24/2017	Calcium	91.8	mg/l	7440-70-2
D-1D	05/16/2017	Calcium	90.2	mg/l	7440-70-2
D-1D	06/27/2017	Calcium	90.9	mg/l	7440-70-2
D-1D	06/27/2017	Calcium	93.5	mg/l	7440-70-2
D-1D	07/25/2017	Calcium	90.8	mg/l	7440-70-2
D-1D	08/15/2017	Calcium	88.4	mg/l	7440-70-2
D-1D	09/06/2017	Calcium	88.7	mg/l	7440-70-2
D-1D	02/21/2017	Chloride	39.8	mg/l	16887-00-6
D-1D	03/22/2017	Chloride	39.7	mg/l	16887-00-6
D-1D	04/24/2017	Chloride	42.8	mg/l	16887-00-6
D-1D	05/16/2017	Chloride	41.4	mg/l	16887-00-6
D-1D	06/27/2017	Chloride	40.3	mg/l	16887-00-6
D-1D	06/27/2017	Chloride	41.4	mg/l	16887-00-6
D-1D	07/25/2017	Chloride	42.0	mg/l	16887-00-6
D-1D	08/15/2017	Chloride	38.5	mg/l	16887-00-6
D-1D	09/06/2017	Chloride	39.8	mg/l	16887-00-6
D-1D	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1D	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	05/16/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1D	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1D	03/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1D	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1D	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1D	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1D	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1D	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1D	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-1D	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	08/15/2017	Lead	< 0.010	mg/l	7439-92-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1D	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-1D	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1D	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1D	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1D	02/21/2017	pH	7.7	pH UNITS	PH
D-1D	03/22/2017	pH	7.8	pH UNITS	PH
D-1D	04/24/2017	pH	8.0	pH UNITS	PH
D-1D	05/16/2017	pH	7.5	pH UNITS	PH
D-1D	06/27/2017	pH	7.7	pH UNITS	PH
D-1D	06/27/2017	pH	7.8	pH UNITS	PH
D-1D	07/25/2017	pH	7.9	pH UNITS	PH
D-1D	08/15/2017	pH	7.8	pH UNITS	PH
D-1D	09/06/2017	pH	7.9	pH UNITS	PH
D-1D	02/21/2017	Radium (226)	28.4	pci/l	13982-63-3
D-1D	03/22/2017	Radium (226)	< 45.6	pci/l	13982-63-3
D-1D	04/24/2017	Radium (226)	< 55.4	pci/l	13982-63-3
D-1D	05/16/2017	Radium (226)	< 0.116	pci/l	13982-63-3
D-1D	06/27/2017	Radium (226)	0.0972	pci/l	13982-63-3
D-1D	07/25/2017	Radium (226)	< 0.0773	pci/l	13982-63-3
D-1D	08/15/2017	Radium (226)	0.198	pci/l	13982-63-3
D-1D	09/06/2017	Radium (226)	0.109	pci/l	13982-63-3
D-1D	02/21/2017	Radium 228	< 30.7	pci/l	15262-20-1
D-1D	03/22/2017	Radium 228	< 47.2	pci/l	15262-20-1
D-1D	04/24/2017	Radium 228	< 33.8	pci/l	15262-20-1
D-1D	05/16/2017	Radium 228	< 0.362	pci/l	15262-20-1
D-1D	06/27/2017	Radium 228	0.283	pci/l	15262-20-1
D-1D	07/25/2017	Radium 228	< 0.416	pci/l	15262-20-1
D-1D	08/15/2017	Radium 228	< 0.337	pci/l	15262-20-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1D	09/06/2017	Radium 228	0.718	pci/l	15262-20-1
D-1D	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	05/16/2017	Selenium	1.0	ug/l	7782-49-2
D-1D	06/27/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1D	02/21/2017	Sulfate as SO4	28.2	mg/l	14808-79-8
D-1D	03/22/2017	Sulfate as SO4	29.4	mg/l	14808-79-8
D-1D	04/24/2017	Sulfate as SO4	28.8	mg/l	14808-79-8
D-1D	05/16/2017	Sulfate as SO4	31.7	mg/l	14808-79-8
D-1D	06/27/2017	Sulfate as SO4	30.7	mg/l	14808-79-8
D-1D	06/27/2017	Sulfate as SO4	31.2	mg/l	14808-79-8
D-1D	07/25/2017	Sulfate as SO4	28.7	mg/l	14808-79-8
D-1D	08/15/2017	Sulfate as SO4	29.6	mg/l	14808-79-8
D-1D	09/06/2017	Sulfate as SO4	27.9	mg/l	14808-79-8
D-1D	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1D	02/21/2017	Total Dissolved Solids	409	mg/l	TDS
D-1D	03/22/2017	Total Dissolved Solids	411	mg/l	TDS
D-1D	04/24/2017	Total Dissolved Solids	391	mg/l	TDS
D-1D	05/16/2017	Total Dissolved Solids	403	mg/l	TDS
D-1D	06/27/2017	Total Dissolved Solids	407	mg/l	TDS
D-1D	06/27/2017	Total Dissolved Solids	427	mg/l	TDS
D-1D	07/25/2017	Total Dissolved Solids	414	mg/l	TDS
D-1D	08/15/2017	Total Dissolved Solids	442	mg/l	TDS
D-1D	09/06/2017	Total Dissolved Solids	437	mg/l	TDS
D-1S	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-1S	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1S	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-1S	02/21/2017	Barium	0.052	mg/l	7440-39-3
D-1S	03/22/2017	Barium	0.053	mg/l	7440-39-3
D-1S	04/24/2017	Barium	0.057	mg/l	7440-39-3
D-1S	05/16/2017	Barium	0.055	mg/l	7440-39-3
D-1S	06/27/2017	Barium	0.054	mg/l	7440-39-3
D-1S	07/25/2017	Barium	0.059	mg/l	7440-39-3
D-1S	08/15/2017	Barium	0.059	mg/l	7440-39-3
D-1S	09/06/2017	Barium	0.054	mg/l	7440-39-3
D-1S	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-1S	02/21/2017	Boron	0.035	mg/l	7440-42-8
D-1S	03/22/2017	Boron	0.038	mg/l	7440-42-8
D-1S	04/24/2017	Boron	0.038	mg/l	7440-42-8
D-1S	05/16/2017	Boron	0.038	mg/l	7440-42-8
D-1S	06/27/2017	Boron	0.040	mg/l	7440-42-8
D-1S	07/25/2017	Boron	0.043	mg/l	7440-42-8
D-1S	08/15/2017	Boron	0.045	mg/l	7440-42-8
D-1S	09/06/2017	Boron	0.049	mg/l	7440-42-8
D-1S	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-1S	02/21/2017	Calcium	99.5	mg/l	7440-70-2
D-1S	03/22/2017	Calcium	103	mg/l	7440-70-2
D-1S	03/22/2017	Calcium	106	mg/l	7440-70-2
D-1S	04/24/2017	Calcium	107	mg/l	7440-70-2
D-1S	05/16/2017	Calcium	105	mg/l	7440-70-2
D-1S	06/27/2017	Calcium	106	mg/l	7440-70-2
D-1S	06/27/2017	Calcium	107	mg/l	7440-70-2
D-1S	07/25/2017	Calcium	110	mg/l	7440-70-2
D-1S	08/15/2017	Calcium	107	mg/l	7440-70-2
D-1S	09/06/2017	Calcium	102	mg/l	7440-70-2
D-1S	02/21/2017	Chloride	32.4	mg/l	16887-00-6
D-1S	03/22/2017	Chloride	32.8	mg/l	16887-00-6
D-1S	03/22/2017	Chloride	33.1	mg/l	16887-00-6
D-1S	04/24/2017	Chloride	34.6	mg/l	16887-00-6
D-1S	05/16/2017	Chloride	32.4	mg/l	16887-00-6

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1S	06/27/2017	Chloride	33.2	mg/l	16887-00-6
D-1S	06/27/2017	Chloride	34.1	mg/l	16887-00-6
D-1S	07/25/2017	Chloride	32.2	mg/l	16887-00-6
D-1S	08/15/2017	Chloride	32.4	mg/l	16887-00-6
D-1S	09/06/2017	Chloride	34.9	mg/l	16887-00-6
D-1S	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-1S	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	05/16/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-1S	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1S	03/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1S	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1S	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1S	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1S	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1S	08/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-1S	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-1S	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	03/22/2017	Lead	< 10.0	ug/l	7439-92-1
D-1S	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-1S	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-1S	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-1S	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1S	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-1S	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-1S	02/21/2017	pH	7.4	pH UNITS	PH
D-1S	03/22/2017	pH	7.3	pH UNITS	PH
D-1S	03/22/2017	pH	7.7	pH UNITS	PH
D-1S	04/24/2017	pH	7.7	pH UNITS	PH
D-1S	05/16/2017	pH	7.3	pH UNITS	PH
D-1S	06/27/2017	pH	7.3	pH UNITS	PH
D-1S	06/27/2017	pH	7.4	pH UNITS	PH
D-1S	07/25/2017	pH	7.6	pH UNITS	PH
D-1S	08/15/2017	pH	7.6	pH UNITS	PH
D-1S	09/06/2017	pH	7.5	pH UNITS	PH
D-1S	02/21/2017	Radium (226)	< 22.2	pci/l	13982-63-3
D-1S	03/22/2017	Radium (226)	< 46.3	pci/l	13982-63-3
D-1S	04/24/2017	Radium (226)	33.4	pci/l	13982-63-3
D-1S	05/16/2017	Radium (226)	< 0.114	pci/l	13982-63-3
D-1S	06/27/2017	Radium (226)	< 0.0944	pci/l	13982-63-3
D-1S	07/25/2017	Radium (226)	0.134	pci/l	13982-63-3
D-1S	08/15/2017	Radium (226)	0.125	pci/l	13982-63-3
D-1S	09/06/2017	Radium (226)	0.0733	pci/l	13982-63-3
D-1S	02/21/2017	Radium 228	< 36.8	pci/l	15262-20-1
D-1S	03/22/2017	Radium 228	< 38.7	pci/l	15262-20-1
D-1S	04/24/2017	Radium 228	< 36.8	pci/l	15262-20-1
D-1S	05/16/2017	Radium 228	0.476	pci/l	15262-20-1
D-1S	06/27/2017	Radium 228	< 0.276	pci/l	15262-20-1
D-1S	07/25/2017	Radium 228	< 0.362	pci/l	15262-20-1
D-1S	08/15/2017	Radium 228	< 0.301	pci/l	15262-20-1
D-1S	09/06/2017	Radium 228	0.416	pci/l	15262-20-1
D-1S	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	06/27/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-1S	02/21/2017	Sulfate as SO4	28.1	mg/l	14808-79-8



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-1S	03/22/2017	Sulfate as SO4	29.1	mg/l	14808-79-8
D-1S	03/22/2017	Sulfate as SO4	29.7	mg/l	14808-79-8
D-1S	04/24/2017	Sulfate as SO4	29.1	mg/l	14808-79-8
D-1S	05/16/2017	Sulfate as SO4	28.8	mg/l	14808-79-8
D-1S	06/27/2017	Sulfate as SO4	28.5	mg/l	14808-79-8
D-1S	06/27/2017	Sulfate as SO4	28.6	mg/l	14808-79-8
D-1S	07/25/2017	Sulfate as SO4	27.3	mg/l	14808-79-8
D-1S	08/15/2017	Sulfate as SO4	28.1	mg/l	14808-79-8
D-1S	09/06/2017	Sulfate as SO4	26.2	mg/l	14808-79-8
D-1S	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-1S	02/21/2017	Total Dissolved Solids	430	mg/l	TDS
D-1S	03/22/2017	Total Dissolved Solids	424	mg/l	TDS
D-1S	04/24/2017	Total Dissolved Solids	423	mg/l	TDS
D-1S	05/16/2017	Total Dissolved Solids	456	mg/l	TDS
D-1S	06/27/2017	Total Dissolved Solids	429	mg/l	TDS
D-1S	06/27/2017	Total Dissolved Solids	434	mg/l	TDS
D-1S	07/25/2017	Total Dissolved Solids	460	mg/l	TDS
D-1S	08/15/2017	Total Dissolved Solids	509	mg/l	TDS
D-1S	09/06/2017	Total Dissolved Solids	473	mg/l	TDS
D-2D	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2D	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2D	02/21/2017	Barium	0.049	mg/l	7440-39-3
D-2D	03/22/2017	Barium	0.050	mg/l	7440-39-3
D-2D	04/24/2017	Barium	0.052	mg/l	7440-39-3
D-2D	05/16/2017	Barium	0.051	mg/l	7440-39-3
D-2D	06/28/2017	Barium	0.050	mg/l	7440-39-3
D-2D	07/26/2017	Barium	0.050	mg/l	7440-39-3
D-2D	08/15/2017	Barium	0.051	mg/l	7440-39-3

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2D	09/06/2017	Barium	0.048	mg/l	7440-39-3
D-2D	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2D	02/21/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	03/22/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	05/16/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	06/28/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	07/26/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	08/15/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	09/06/2017	Boron	< 0.020	mg/l	7440-42-8
D-2D	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2D	02/21/2017	Calcium	85.1	mg/l	7440-70-2
D-2D	03/22/2017	Calcium	89.3	mg/l	7440-70-2
D-2D	04/24/2017	Calcium	91.8	mg/l	7440-70-2
D-2D	05/16/2017	Calcium	90.0	mg/l	7440-70-2
D-2D	06/28/2017	Calcium	91.0	mg/l	7440-70-2
D-2D	06/28/2017	Calcium	91.2	mg/l	7440-70-2
D-2D	07/26/2017	Calcium	87.3	mg/l	7440-70-2
D-2D	08/15/2017	Calcium	86.5	mg/l	7440-70-2
D-2D	09/06/2017	Calcium	84.0	mg/l	7440-70-2
D-2D	02/21/2017	Chloride	32.6	mg/l	16887-00-6
D-2D	03/22/2017	Chloride	32.5	mg/l	16887-00-6
D-2D	04/24/2017	Chloride	34.7	mg/l	16887-00-6
D-2D	05/16/2017	Chloride	33.4	mg/l	16887-00-6
D-2D	06/28/2017	Chloride	32.9	mg/l	16887-00-6
D-2D	06/28/2017	Chloride	33.6	mg/l	16887-00-6
D-2D	07/26/2017	Chloride	31.3	mg/l	16887-00-6
D-2D	08/15/2017	Chloride	31.3	mg/l	16887-00-6
D-2D	09/06/2017	Chloride	31.9	mg/l	16887-00-6
D-2D	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	06/28/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	07/26/2017	Chromium	< 0.0040	mg/l	7440-47-3

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2D	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2D	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	05/16/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	06/28/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	07/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2D	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2D	03/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2D	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2D	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2D	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2D	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2D	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2D	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-2D	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-2D	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2D	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2D	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2D	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2D	02/21/2017	pH	7.6	pH UNITS	PH
D-2D	03/22/2017	pH	7.7	pH UNITS	PH
D-2D	04/24/2017	pH	7.9	pH UNITS	PH
D-2D	05/16/2017	pH	7.5	pH UNITS	PH
D-2D	06/28/2017	pH	7.6	pH UNITS	PH
D-2D	07/26/2017	pH	7.7	pH UNITS	PH
D-2D	08/15/2017	pH	7.7	pH UNITS	PH
D-2D	09/06/2017	pH	7.8	pH UNITS	PH
D-2D	02/21/2017	Radium (226)	24.3	pci/l	13982-63-3
D-2D	03/22/2017	Radium (226)	19.7	pci/l	13982-63-3
D-2D	04/24/2017	Radium (226)	79.2	pci/l	13982-63-3
D-2D	05/16/2017	Radium (226)	< 0.0955	pci/l	13982-63-3
D-2D	06/28/2017	Radium (226)	< 0.0769	pci/l	13982-63-3
D-2D	07/26/2017	Radium (226)	< 0.0767	pci/l	13982-63-3
D-2D	08/15/2017	Radium (226)	0.0726	pci/l	13982-63-3
D-2D	09/06/2017	Radium (226)	< 0.0721	pci/l	13982-63-3
D-2D	02/21/2017	Radium 228	< 42.3	pci/l	15262-20-1
D-2D	03/22/2017	Radium 228	< 31.6	pci/l	15262-20-1
D-2D	04/24/2017	Radium 228	< 21.0	pci/l	15262-20-1
D-2D	05/16/2017	Radium 228	< 0.493	pci/l	15262-20-1
D-2D	06/28/2017	Radium 228	0.342	pci/l	15262-20-1
D-2D	07/26/2017	Radium 228	< 0.338	pci/l	15262-20-1
D-2D	08/15/2017	Radium 228	< 0.325	pci/l	15262-20-1
D-2D	09/06/2017	Radium 228	0.546	pci/l	15262-20-1
D-2D	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	06/28/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2D	02/21/2017	Sulfate as SO4	23.9	mg/l	14808-79-8
D-2D	03/22/2017	Sulfate as SO4	25.8	mg/l	14808-79-8
D-2D	04/24/2017	Sulfate as SO4	24.6	mg/l	14808-79-8
D-2D	05/16/2017	Sulfate as SO4	29.3	mg/l	14808-79-8
D-2D	06/28/2017	Sulfate as SO4	26.6	mg/l	14808-79-8
D-2D	06/28/2017	Sulfate as SO4	27.4	mg/l	14808-79-8
D-2D	07/26/2017	Sulfate as SO4	24.7	mg/l	14808-79-8
D-2D	08/15/2017	Sulfate as SO4	25.2	mg/l	14808-79-8
D-2D	09/06/2017	Sulfate as SO4	23.5	mg/l	14808-79-8
D-2D	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2D	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2D	02/21/2017	Total Dissolved Solids	398	mg/l	TDS
D-2D	03/22/2017	Total Dissolved Solids	391	mg/l	TDS
D-2D	04/24/2017	Total Dissolved Solids	376	mg/l	TDS
D-2D	05/16/2017	Total Dissolved Solids	395	mg/l	TDS
D-2D	06/28/2017	Total Dissolved Solids	408	mg/l	TDS
D-2D	07/26/2017	Total Dissolved Solids	390	mg/l	TDS
D-2D	08/15/2017	Total Dissolved Solids	445	mg/l	TDS
D-2D	09/06/2017	Total Dissolved Solids	429	mg/l	TDS
D-2S	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-2S	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-2S	02/21/2017	Barium	0.052	mg/l	7440-39-3
D-2S	03/22/2017	Barium	0.050	mg/l	7440-39-3
D-2S	04/24/2017	Barium	0.054	mg/l	7440-39-3
D-2S	05/16/2017	Barium	0.057	mg/l	7440-39-3
D-2S	06/28/2017	Barium	0.047	mg/l	7440-39-3
D-2S	07/26/2017	Barium	0.049	mg/l	7440-39-3
D-2S	08/15/2017	Barium	0.050	mg/l	7440-39-3
D-2S	09/06/2017	Barium	0.048	mg/l	7440-39-3
D-2S	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-2S	02/21/2017	Boron	0.021	mg/l	7440-42-8
D-2S	03/22/2017	Boron	0.020	mg/l	7440-42-8
D-2S	04/24/2017	Boron	0.021	mg/l	7440-42-8
D-2S	05/16/2017	Boron	0.022	mg/l	7440-42-8
D-2S	06/28/2017	Boron	0.021	mg/l	7440-42-8
D-2S	07/26/2017	Boron	0.023	mg/l	7440-42-8
D-2S	08/15/2017	Boron	0.023	mg/l	7440-42-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2S	09/06/2017	Boron	0.027	mg/l	7440-42-8
D-2S	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-2S	02/21/2017	Calcium	102	mg/l	7440-70-2
D-2S	03/22/2017	Calcium	100	mg/l	7440-70-2
D-2S	03/22/2017	Calcium	98.7	mg/l	7440-70-2
D-2S	04/24/2017	Calcium	104	mg/l	7440-70-2
D-2S	05/16/2017	Calcium	104	mg/l	7440-70-2
D-2S	06/28/2017	Calcium	101	mg/l	7440-70-2
D-2S	06/28/2017	Calcium	102	mg/l	7440-70-2
D-2S	07/26/2017	Calcium	99.0	mg/l	7440-70-2
D-2S	08/15/2017	Calcium	98.9	mg/l	7440-70-2
D-2S	09/06/2017	Calcium	98.3	mg/l	7440-70-2
D-2S	02/21/2017	Chloride	45.7	mg/l	16887-00-6
D-2S	03/22/2017	Chloride	45.6	mg/l	16887-00-6
D-2S	03/22/2017	Chloride	46.7	mg/l	16887-00-6
D-2S	04/24/2017	Chloride	48.8	mg/l	16887-00-6
D-2S	05/16/2017	Chloride	47.6	mg/l	16887-00-6
D-2S	06/28/2017	Chloride	46.7	mg/l	16887-00-6
D-2S	06/28/2017	Chloride	47.7	mg/l	16887-00-6
D-2S	07/26/2017	Chloride	45.2	mg/l	16887-00-6
D-2S	08/15/2017	Chloride	44.6	mg/l	16887-00-6
D-2S	09/06/2017	Chloride	46.2	mg/l	16887-00-6
D-2S	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	06/28/2017	Chromium	0.0065	mg/l	7440-47-3
D-2S	07/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-2S	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	05/16/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	06/28/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	07/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-2S	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2S	03/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2S	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2S	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2S	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2S	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2S	08/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-2S	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-2S	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	03/22/2017	Lead	< 10.0	ug/l	7439-92-1
D-2S	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-2S	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-2S	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-2S	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-2S	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-2S	02/21/2017	pH	7.5	pH UNITS	PH
D-2S	03/22/2017	pH	7.5	pH UNITS	PH
D-2S	03/22/2017	pH	7.7	pH UNITS	PH
D-2S	04/24/2017	pH	7.8	pH UNITS	PH
D-2S	05/16/2017	pH	7.3	pH UNITS	PH
D-2S	06/28/2017	pH	7.5	pH UNITS	PH
D-2S	07/26/2017	pH	7.5	pH UNITS	PH
D-2S	08/15/2017	pH	7.6	pH UNITS	PH
D-2S	09/06/2017	pH	7.6	pH UNITS	PH
D-2S	02/21/2017	Radium (226)	< 40.8	pci/l	13982-63-3
D-2S	03/22/2017	Radium (226)	< 17.9	pci/l	13982-63-3



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-2S	04/24/2017	Radium (226)	< 62.0	pci/l	13982-63-3
D-2S	05/16/2017	Radium (226)	< 0.102	pci/l	13982-63-3
D-2S	06/28/2017	Radium (226)	0.0926	pci/l	13982-63-3
D-2S	07/26/2017	Radium (226)	0.141	pci/l	13982-63-3
D-2S	08/15/2017	Radium (226)	0.122	pci/l	13982-63-3
D-2S	09/06/2017	Radium (226)	< 0.0787	pci/l	13982-63-3
D-2S	02/21/2017	Radium 228	< 28.7	pci/l	15262-20-1
D-2S	03/22/2017	Radium 228	< 32.2	pci/l	15262-20-1
D-2S	04/24/2017	Radium 228	< 59.1	pci/l	15262-20-1
D-2S	05/16/2017	Radium 228	< 0.370	pci/l	15262-20-1
D-2S	06/28/2017	Radium 228	< 0.305	pci/l	15262-20-1
D-2S	07/26/2017	Radium 228	< 0.412	pci/l	15262-20-1
D-2S	08/15/2017	Radium 228	< 0.331	pci/l	15262-20-1
D-2S	09/06/2017	Radium 228	0.503	pci/l	15262-20-1
D-2S	02/21/2017	Selenium	1.3	ug/l	7782-49-2
D-2S	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2S	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2S	05/16/2017	Selenium	1.2	ug/l	7782-49-2
D-2S	06/28/2017	Selenium	1.4	ug/l	7782-49-2
D-2S	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2S	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2S	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-2S	02/21/2017	Sulfate as SO4	27.3	mg/l	14808-79-8
D-2S	03/22/2017	Sulfate as SO4	28.0	mg/l	14808-79-8
D-2S	03/22/2017	Sulfate as SO4	30.1	mg/l	14808-79-8
D-2S	04/24/2017	Sulfate as SO4	28.0	mg/l	14808-79-8
D-2S	05/16/2017	Sulfate as SO4	31.3	mg/l	14808-79-8
D-2S	06/28/2017	Sulfate as SO4	30.1	mg/l	14808-79-8
D-2S	06/28/2017	Sulfate as SO4	30.7	mg/l	14808-79-8
D-2S	07/26/2017	Sulfate as SO4	29.3	mg/l	14808-79-8
D-2S	08/15/2017	Sulfate as SO4	29.0	mg/l	14808-79-8
D-2S	09/06/2017	Sulfate as SO4	27.2	mg/l	14808-79-8
D-2S	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-2S	02/21/2017	Total Dissolved Solids	442	mg/l	TDS
D-2S	03/22/2017	Total Dissolved Solids	429	mg/l	TDS
D-2S	04/24/2017	Total Dissolved Solids	404	mg/l	TDS
D-2S	05/16/2017	Total Dissolved Solids	449	mg/l	TDS
D-2S	06/28/2017	Total Dissolved Solids	437	mg/l	TDS
D-2S	07/26/2017	Total Dissolved Solids	437	mg/l	TDS
D-2S	08/15/2017	Total Dissolved Solids	483	mg/l	TDS
D-2S	09/06/2017	Total Dissolved Solids	460	mg/l	TDS
D-3D	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3D	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3D	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3D	02/21/2017	Barium	0.051	mg/l	7440-39-3
D-3D	03/22/2017	Barium	0.050	mg/l	7440-39-3
D-3D	03/22/2017	Barium	0.053	mg/l	7440-39-3
D-3D	04/24/2017	Barium	0.054	mg/l	7440-39-3
D-3D	05/15/2017	Barium	0.052	mg/l	7440-39-3
D-3D	06/27/2017	Barium	0.051	mg/l	7440-39-3
D-3D	06/27/2017	Barium	0.052	mg/l	7440-39-3
D-3D	07/25/2017	Barium	0.054	mg/l	7440-39-3
D-3D	08/14/2017	Barium	0.054	mg/l	7440-39-3
D-3D	09/05/2017	Barium	0.053	mg/l	7440-39-3
D-3D	09/05/2017	Barium	0.054	mg/l	7440-39-3
D-3D	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3D	02/21/2017	Boron	0.023	mg/l	7440-42-8
D-3D	03/22/2017	Boron	0.023	mg/l	7440-42-8
D-3D	04/24/2017	Boron	0.022	mg/l	7440-42-8
D-3D	04/24/2017	Boron	0.023	mg/l	7440-42-8
D-3D	05/15/2017	Boron	0.024	mg/l	7440-42-8
D-3D	06/27/2017	Boron	0.024	mg/l	7440-42-8
D-3D	06/27/2017	Boron	0.025	mg/l	7440-42-8
D-3D	07/25/2017	Boron	0.023	mg/l	7440-42-8
D-3D	08/14/2017	Boron	0.025	mg/l	7440-42-8
D-3D	09/05/2017	Boron	0.027	mg/l	7440-42-8
D-3D	09/05/2017	Boron	0.028	mg/l	7440-42-8
D-3D	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3D	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3D	02/21/2017	Calcium	96.8	mg/l	7440-70-2
D-3D	03/22/2017	Calcium	102	mg/l	7440-70-2
D-3D	03/22/2017	Calcium	98.2	mg/l	7440-70-2
D-3D	04/24/2017	Calcium	102	mg/l	7440-70-2
D-3D	05/15/2017	Calcium	101	mg/l	7440-70-2
D-3D	06/27/2017	Calcium	100	mg/l	7440-70-2
D-3D	06/27/2017	Calcium	99.5	mg/l	7440-70-2
D-3D	06/27/2017	Calcium	99.9	mg/l	7440-70-2
D-3D	07/25/2017	Calcium	101	mg/l	7440-70-2
D-3D	08/14/2017	Calcium	96.8	mg/l	7440-70-2
D-3D	08/14/2017	Calcium	97.9	mg/l	7440-70-2
D-3D	09/05/2017	Calcium	100	mg/l	7440-70-2
D-3D	09/05/2017	Calcium	99.6	mg/l	7440-70-2
D-3D	02/21/2017	Chloride	78.4	mg/l	16887-00-6
D-3D	03/22/2017	Chloride	31.3	mg/l	16887-00-6
D-3D	03/22/2017	Chloride	32.4	mg/l	16887-00-6
D-3D	04/24/2017	Chloride	33.1	mg/l	16887-00-6
D-3D	04/24/2017	Chloride	33.4	mg/l	16887-00-6
D-3D	05/15/2017	Chloride	32.1	mg/l	16887-00-6
D-3D	06/27/2017	Chloride	33.0	mg/l	16887-00-6
D-3D	06/27/2017	Chloride	33.4	mg/l	16887-00-6
D-3D	06/27/2017	Chloride	33.7	mg/l	16887-00-6
D-3D	07/25/2017	Chloride	31.8	mg/l	16887-00-6
D-3D	08/14/2017	Chloride	31.7	mg/l	16887-00-6
D-3D	08/14/2017	Chloride	32.2	mg/l	16887-00-6
D-3D	09/05/2017	Chloride	32.7	mg/l	16887-00-6
D-3D	09/05/2017	Chloride	32.8	mg/l	16887-00-6
D-3D	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3D	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3D	02/21/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3D	03/22/2017	Fluoride	< 0.10	mg/l	16984-48-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3D	03/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3D	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3D	06/27/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3D	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3D	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3D	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3D	09/05/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3D	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-3D	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
D-3D	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3D	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3D	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3D	02/21/2017	pH	7.6	pH UNITS	PH
D-3D	03/22/2017	pH	7.5	pH UNITS	PH
D-3D	03/22/2017	pH	7.7	pH UNITS	PH
D-3D	04/24/2017	pH	7.8	pH UNITS	PH
D-3D	04/24/2017	pH	7.9	pH UNITS	PH
D-3D	05/15/2017	pH	7.5	pH UNITS	PH
D-3D	06/27/2017	pH	7.5	pH UNITS	PH
D-3D	07/25/2017	pH	7.7	pH UNITS	PH

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3D	08/14/2017	pH	7.6	pH UNITS	PH
D-3D	09/05/2017	pH	7.7	pH UNITS	PH
D-3D	02/21/2017	Radium (226)	< 44.2	pci/l	13982-63-3
D-3D	03/22/2017	Radium (226)	< 17.5	pci/l	13982-63-3
D-3D	03/22/2017	Radium (226)	20.2	pci/l	13982-63-3
D-3D	04/24/2017	Radium (226)	< 63.2	pci/l	13982-63-3
D-3D	04/24/2017	Radium (226)	67.6	pci/l	13982-63-3
D-3D	05/15/2017	Radium (226)	< 0.0924	pci/l	13982-63-3
D-3D	06/27/2017	Radium (226)	< 0.0715	pci/l	13982-63-3
D-3D	06/27/2017	Radium (226)	< 0.0903	pci/l	13982-63-3
D-3D	07/25/2017	Radium (226)	0.128	pci/l	13982-63-3
D-3D	08/14/2017	Radium (226)	0.0736	pci/l	13982-63-3
D-3D	08/14/2017	Radium (226)	0.0994	pci/l	13982-63-3
D-3D	09/05/2017	Radium (226)	0.128	pci/l	13982-63-3
D-3D	09/05/2017	Radium (226)	0.147	pci/l	13982-63-3
D-3D	02/21/2017	Radium 228	< 33.8	pci/l	15262-20-1
D-3D	03/22/2017	Radium 228	< 27.2	pci/l	15262-20-1
D-3D	03/22/2017	Radium 228	< 29.1	pci/l	15262-20-1
D-3D	04/24/2017	Radium 228	< 23.4	pci/l	15262-20-1
D-3D	04/24/2017	Radium 228	< 49.7	pci/l	15262-20-1
D-3D	05/15/2017	Radium 228	0.525	pci/l	15262-20-1
D-3D	06/27/2017	Radium 228	< 0.266	pci/l	15262-20-1
D-3D	06/27/2017	Radium 228	< 0.307	pci/l	15262-20-1
D-3D	07/25/2017	Radium 228	< 0.442	pci/l	15262-20-1
D-3D	08/14/2017	Radium 228	< 0.288	pci/l	15262-20-1
D-3D	08/14/2017	Radium 228	< 0.305	pci/l	15262-20-1
D-3D	09/05/2017	Radium 228	< 0.420	pci/l	15262-20-1
D-3D	09/05/2017	Radium 228	0.994	pci/l	15262-20-1
D-3D	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	05/15/2017	Selenium	1.1	ug/l	7782-49-2
D-3D	06/27/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3D	02/21/2017	Sulfate as SO4	75.8	mg/l	14808-79-8
D-3D	03/22/2017	Sulfate as SO4	32.0	mg/l	14808-79-8
D-3D	03/22/2017	Sulfate as SO4	35.0	mg/l	14808-79-8
D-3D	04/24/2017	Sulfate as SO4	31.6	mg/l	14808-79-8
D-3D	04/24/2017	Sulfate as SO4	33.3	mg/l	14808-79-8
D-3D	05/15/2017	Sulfate as SO4	34.5	mg/l	14808-79-8
D-3D	06/27/2017	Sulfate as SO4	33.4	mg/l	14808-79-8
D-3D	06/27/2017	Sulfate as SO4	33.8	mg/l	14808-79-8
D-3D	07/25/2017	Sulfate as SO4	32.3	mg/l	14808-79-8
D-3D	08/14/2017	Sulfate as SO4	32.9	mg/l	14808-79-8
D-3D	08/14/2017	Sulfate as SO4	33.4	mg/l	14808-79-8
D-3D	09/05/2017	Sulfate as SO4	31.1	mg/l	14808-79-8
D-3D	09/05/2017	Sulfate as SO4	31.2	mg/l	14808-79-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3D	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3D	02/21/2017	Total Dissolved Solids	421	mg/l	TDS
D-3D	03/22/2017	Total Dissolved Solids	417	mg/l	TDS
D-3D	03/22/2017	Total Dissolved Solids	418	mg/l	TDS
D-3D	04/24/2017	Total Dissolved Solids	410	mg/l	TDS
D-3D	04/24/2017	Total Dissolved Solids	423	mg/l	TDS
D-3D	05/15/2017	Total Dissolved Solids	403	mg/l	TDS
D-3D	06/27/2017	Total Dissolved Solids	405	mg/l	TDS
D-3D	06/27/2017	Total Dissolved Solids	448	mg/l	TDS
D-3D	06/27/2017	Total Dissolved Solids	449	mg/l	TDS
D-3D	07/25/2017	Total Dissolved Solids	432	mg/l	TDS
D-3D	08/14/2017	Total Dissolved Solids	463	mg/l	TDS
D-3D	08/14/2017	Total Dissolved Solids	481	mg/l	TDS
D-3D	09/05/2017	Total Dissolved Solids	430	mg/l	TDS
D-3D	09/05/2017	Total Dissolved Solids	436	mg/l	TDS
D-3S	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
D-3S	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-3S	02/21/2017	Barium	0.048	mg/l	7440-39-3
D-3S	03/22/2017	Barium	0.049	mg/l	7440-39-3
D-3S	04/24/2017	Barium	0.051	mg/l	7440-39-3
D-3S	05/15/2017	Barium	0.049	mg/l	7440-39-3
D-3S	06/27/2017	Barium	0.049	mg/l	7440-39-3
D-3S	07/25/2017	Barium	0.053	mg/l	7440-39-3
D-3S	08/14/2017	Barium	0.053	mg/l	7440-39-3
D-3S	09/05/2017	Barium	0.049	mg/l	7440-39-3
D-3S	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3S	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-3S	02/21/2017	Boron	0.054	mg/l	7440-42-8
D-3S	03/22/2017	Boron	0.055	mg/l	7440-42-8
D-3S	04/24/2017	Boron	0.061	mg/l	7440-42-8
D-3S	05/15/2017	Boron	0.065	mg/l	7440-42-8
D-3S	06/27/2017	Boron	0.069	mg/l	7440-42-8
D-3S	07/25/2017	Boron	0.074	mg/l	7440-42-8
D-3S	08/14/2017	Boron	0.079	mg/l	7440-42-8
D-3S	09/05/2017	Boron	0.079	mg/l	7440-42-8
D-3S	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-3S	02/21/2017	Calcium	99.5	mg/l	7440-70-2
D-3S	03/22/2017	Calcium	101	mg/l	7440-70-2
D-3S	03/22/2017	Calcium	106	mg/l	7440-70-2
D-3S	04/24/2017	Calcium	105	mg/l	7440-70-2
D-3S	05/15/2017	Calcium	103	mg/l	7440-70-2
D-3S	06/27/2017	Calcium	106	mg/l	7440-70-2
D-3S	06/27/2017	Calcium	107	mg/l	7440-70-2
D-3S	07/25/2017	Calcium	108	mg/l	7440-70-2
D-3S	08/14/2017	Calcium	104	mg/l	7440-70-2
D-3S	09/05/2017	Calcium	98.5	mg/l	7440-70-2
D-3S	02/21/2017	Chloride	51.9	mg/l	16887-00-6
D-3S	03/22/2017	Chloride	54.6	mg/l	16887-00-6
D-3S	03/22/2017	Chloride	55.7	mg/l	16887-00-6
D-3S	04/24/2017	Chloride	59.3	mg/l	16887-00-6
D-3S	05/15/2017	Chloride	59.2	mg/l	16887-00-6
D-3S	06/27/2017	Chloride	63.1	mg/l	16887-00-6
D-3S	06/27/2017	Chloride	63.8	mg/l	16887-00-6
D-3S	07/25/2017	Chloride	63.3	mg/l	16887-00-6
D-3S	08/14/2017	Chloride	62.9	mg/l	16887-00-6
D-3S	09/05/2017	Chloride	67.8	mg/l	16887-00-6
D-3S	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-3S	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3S	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-3S	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3S	03/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-3S	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	07/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	08/14/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	09/05/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-3S	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	03/22/2017	Lead	< 10.0	ug/l	7439-92-1
D-3S	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-3S	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
D-3S	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
D-3S	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
D-3S	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7

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Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3S	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-3S	02/21/2017	pH	7.5	pH UNITS	PH
D-3S	03/22/2017	pH	7.6	pH UNITS	PH
D-3S	04/24/2017	pH	7.8	pH UNITS	PH
D-3S	05/15/2017	pH	7.5	pH UNITS	PH
D-3S	06/27/2017	pH	7.5	pH UNITS	PH
D-3S	07/25/2017	pH	7.7	pH UNITS	PH
D-3S	08/14/2017	pH	7.6	pH UNITS	PH
D-3S	09/05/2017	pH	7.7	pH UNITS	PH
D-3S	02/21/2017	Radium (226)	< 18.1	pci/l	13982-63-3
D-3S	03/22/2017	Radium (226)	< 31.9	pci/l	13982-63-3
D-3S	04/24/2017	Radium (226)	< 59.9	pci/l	13982-63-3
D-3S	05/15/2017	Radium (226)	< 0.105	pci/l	13982-63-3
D-3S	06/27/2017	Radium (226)	< 0.0771	pci/l	13982-63-3
D-3S	07/25/2017	Radium (226)	< 0.0877	pci/l	13982-63-3
D-3S	08/14/2017	Radium (226)	0.150	pci/l	13982-63-3
D-3S	09/05/2017	Radium (226)	< 0.0966	pci/l	13982-63-3
D-3S	02/21/2017	Radium 228	< 24.8	pci/l	15262-20-1
D-3S	03/22/2017	Radium 228	< 25.0	pci/l	15262-20-1
D-3S	04/24/2017	Radium 228	< 60.6	pci/l	15262-20-1
D-3S	05/15/2017	Radium 228	< 0.334	pci/l	15262-20-1
D-3S	06/27/2017	Radium 228	< 0.278	pci/l	15262-20-1
D-3S	07/25/2017	Radium 228	< 0.388	pci/l	15262-20-1
D-3S	08/14/2017	Radium 228	< 0.356	pci/l	15262-20-1
D-3S	09/05/2017	Radium 228	0.472	pci/l	15262-20-1
D-3S	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3S	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3S	04/24/2017	Selenium	1.2	ug/l	7782-49-2
D-3S	05/15/2017	Selenium	1.9	ug/l	7782-49-2
D-3S	06/27/2017	Selenium	1.5	ug/l	7782-49-2
D-3S	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3S	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3S	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
D-3S	02/21/2017	Sulfate as SO4	35.4	mg/l	14808-79-8
D-3S	03/22/2017	Sulfate as SO4	38.4	mg/l	14808-79-8
D-3S	03/22/2017	Sulfate as SO4	39.9	mg/l	14808-79-8
D-3S	04/24/2017	Sulfate as SO4	41.3	mg/l	14808-79-8
D-3S	05/15/2017	Sulfate as SO4	41.4	mg/l	14808-79-8
D-3S	06/27/2017	Sulfate as SO4	45.0	mg/l	14808-79-8
D-3S	06/27/2017	Sulfate as SO4	45.9	mg/l	14808-79-8
D-3S	07/25/2017	Sulfate as SO4	46.7	mg/l	14808-79-8
D-3S	08/14/2017	Sulfate as SO4	47.7	mg/l	14808-79-8
D-3S	09/05/2017	Sulfate as SO4	47.4	mg/l	14808-79-8
D-3S	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0

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Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-3S	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
D-3S	02/21/2017	Total Dissolved Solids	461	mg/l	TDS
D-3S	03/22/2017	Total Dissolved Solids	431	mg/l	TDS
D-3S	03/22/2017	Total Dissolved Solids	462	mg/l	TDS
D-3S	04/24/2017	Total Dissolved Solids	431	mg/l	TDS
D-3S	05/15/2017	Total Dissolved Solids	425	mg/l	TDS
D-3S	06/27/2017	Total Dissolved Solids	456	mg/l	TDS
D-3S	06/27/2017	Total Dissolved Solids	475	mg/l	TDS
D-3S	07/25/2017	Total Dissolved Solids	475	mg/l	TDS
D-3S	08/14/2017	Total Dissolved Solids	538	mg/l	TDS
D-3S	09/05/2017	Total Dissolved Solids	537	mg/l	TDS
D-4D	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	03/23/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	04/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4D	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	03/23/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	04/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4D	02/21/2017	Barium	0.061	mg/l	7440-39-3
D-4D	03/23/2017	Barium	0.060	mg/l	7440-39-3
D-4D	04/25/2017	Barium	0.062	mg/l	7440-39-3
D-4D	05/16/2017	Barium	0.062	mg/l	7440-39-3
D-4D	06/28/2017	Barium	0.058	mg/l	7440-39-3
D-4D	07/26/2017	Barium	0.060	mg/l	7440-39-3
D-4D	08/15/2017	Barium	0.058	mg/l	7440-39-3
D-4D	09/06/2017	Barium	0.056	mg/l	7440-39-3
D-4D	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	03/23/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	04/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4D	02/21/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	03/23/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	04/25/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	05/16/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	06/28/2017	Boron	< 0.020	mg/l	7440-42-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4D	07/26/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	08/15/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	09/06/2017	Boron	< 0.020	mg/l	7440-42-8
D-4D	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	03/23/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	04/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4D	02/21/2017	Calcium	91.9	mg/l	7440-70-2
D-4D	03/23/2017	Calcium	92.3	mg/l	7440-70-2
D-4D	04/25/2017	Calcium	95.5	mg/l	7440-70-2
D-4D	05/16/2017	Calcium	93.9	mg/l	7440-70-2
D-4D	06/28/2017	Calcium	91.1	mg/l	7440-70-2
D-4D	06/28/2017	Calcium	93.7	mg/l	7440-70-2
D-4D	07/26/2017	Calcium	91.7	mg/l	7440-70-2
D-4D	08/15/2017	Calcium	92.8	mg/l	7440-70-2
D-4D	09/06/2017	Calcium	85.6	mg/l	7440-70-2
D-4D	02/21/2017	Chloride	42.1	mg/l	16887-00-6
D-4D	03/23/2017	Chloride	43.8	mg/l	16887-00-6
D-4D	04/25/2017	Chloride	45.1	mg/l	16887-00-6
D-4D	05/16/2017	Chloride	44.3	mg/l	16887-00-6
D-4D	06/28/2017	Chloride	46.0	mg/l	16887-00-6
D-4D	06/28/2017	Chloride	46.1	mg/l	16887-00-6
D-4D	07/26/2017	Chloride	42.7	mg/l	16887-00-6
D-4D	08/15/2017	Chloride	43.2	mg/l	16887-00-6
D-4D	09/06/2017	Chloride	43.8	mg/l	16887-00-6
D-4D	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	03/23/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	04/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	06/28/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	07/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4D	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	03/23/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	04/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	05/16/2017	Cobalt	0.30	ug/l	7440-48-4
D-4D	06/28/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	07/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4D	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4D	03/23/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4D	04/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-4D	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4D	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-4D	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4D	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4D	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4D	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	03/23/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	04/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-4D	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-4D	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	03/23/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	04/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4D	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	03/23/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	04/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4D	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	03/23/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	04/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4D	02/21/2017	pH	7.6	pH UNITS	PH
D-4D	03/23/2017	pH	7.7	pH UNITS	PH
D-4D	04/25/2017	pH	7.9	pH UNITS	PH
D-4D	05/16/2017	pH	7.5	pH UNITS	PH
D-4D	06/28/2017	pH	7.6	pH UNITS	PH
D-4D	07/26/2017	pH	7.7	pH UNITS	PH
D-4D	08/15/2017	pH	7.7	pH UNITS	PH
D-4D	09/06/2017	pH	7.7	pH UNITS	PH
D-4D	02/21/2017	Radium (226)	28.4	pci/l	13982-63-3
D-4D	03/23/2017	Radium (226)	29.2	pci/l	13982-63-3
D-4D	04/25/2017	Radium (226)	74.4	pci/l	13982-63-3
D-4D	05/16/2017	Radium (226)	< 0.124	pci/l	13982-63-3

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4D	06/28/2017	Radium (226)	0.108	pci/l	13982-63-3
D-4D	07/26/2017	Radium (226)	< 0.0770	pci/l	13982-63-3
D-4D	08/15/2017	Radium (226)	0.0999	pci/l	13982-63-3
D-4D	09/06/2017	Radium (226)	< 0.0787	pci/l	13982-63-3
D-4D	02/21/2017	Radium 228	31.0	pci/l	15262-20-1
D-4D	03/23/2017	Radium 228	< 44.5	pci/l	15262-20-1
D-4D	04/25/2017	Radium 228	< 50.1	pci/l	15262-20-1
D-4D	05/16/2017	Radium 228	< 0.443	pci/l	15262-20-1
D-4D	06/28/2017	Radium 228	< 0.307	pci/l	15262-20-1
D-4D	07/26/2017	Radium 228	< 0.370	pci/l	15262-20-1
D-4D	08/15/2017	Radium 228	< 0.371	pci/l	15262-20-1
D-4D	09/06/2017	Radium 228	0.677	pci/l	15262-20-1
D-4D	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	03/23/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	04/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	06/28/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4D	02/21/2017	Sulfate as SO4	26.6	mg/l	14808-79-8
D-4D	03/23/2017	Sulfate as SO4	31.3	mg/l	14808-79-8
D-4D	04/25/2017	Sulfate as SO4	28.3	mg/l	14808-79-8
D-4D	05/16/2017	Sulfate as SO4	32.6	mg/l	14808-79-8
D-4D	06/28/2017	Sulfate as SO4	29.3	mg/l	14808-79-8
D-4D	06/28/2017	Sulfate as SO4	30.5	mg/l	14808-79-8
D-4D	07/26/2017	Sulfate as SO4	27.2	mg/l	14808-79-8
D-4D	08/15/2017	Sulfate as SO4	27.7	mg/l	14808-79-8
D-4D	09/06/2017	Sulfate as SO4	25.6	mg/l	14808-79-8
D-4D	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	03/23/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	04/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4D	02/21/2017	Total Dissolved Solids	430	mg/l	TDS
D-4D	03/23/2017	Total Dissolved Solids	421	mg/l	TDS
D-4D	04/25/2017	Total Dissolved Solids	413	mg/l	TDS
D-4D	05/16/2017	Total Dissolved Solids	385	mg/l	TDS
D-4D	06/28/2017	Total Dissolved Solids	421	mg/l	TDS
D-4D	07/26/2017	Total Dissolved Solids	411	mg/l	TDS
D-4D	08/15/2017	Total Dissolved Solids	469	mg/l	TDS
D-4D	09/06/2017	Total Dissolved Solids	418	mg/l	TDS
D-4S	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	03/23/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	04/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4S	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-4S	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	03/23/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	04/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-4S	02/21/2017	Barium	0.068	mg/l	7440-39-3
D-4S	03/23/2017	Barium	0.070	mg/l	7440-39-3
D-4S	04/25/2017	Barium	0.071	mg/l	7440-39-3
D-4S	05/16/2017	Barium	0.069	mg/l	7440-39-3
D-4S	06/28/2017	Barium	0.067	mg/l	7440-39-3
D-4S	07/26/2017	Barium	0.067	mg/l	7440-39-3
D-4S	08/15/2017	Barium	0.069	mg/l	7440-39-3
D-4S	09/06/2017	Barium	0.067	mg/l	7440-39-3
D-4S	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	03/23/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	04/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-4S	02/21/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	03/23/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	04/25/2017	Boron	0.020	mg/l	7440-42-8
D-4S	05/16/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	06/28/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	07/26/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	08/15/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	09/06/2017	Boron	< 0.020	mg/l	7440-42-8
D-4S	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	03/23/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	04/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-4S	02/21/2017	Calcium	95.8	mg/l	7440-70-2
D-4S	03/23/2017	Calcium	94.4	mg/l	7440-70-2
D-4S	03/23/2017	Calcium	96.2	mg/l	7440-70-2
D-4S	04/25/2017	Calcium	102	mg/l	7440-70-2
D-4S	05/16/2017	Calcium	97.4	mg/l	7440-70-2



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4S	06/28/2017	Calcium	94.8	mg/l	7440-70-2
D-4S	06/28/2017	Calcium	97.8	mg/l	7440-70-2
D-4S	07/26/2017	Calcium	93.6	mg/l	7440-70-2
D-4S	08/15/2017	Calcium	92.8	mg/l	7440-70-2
D-4S	09/06/2017	Calcium	95.1	mg/l	7440-70-2
D-4S	02/21/2017	Chloride	43.0	mg/l	16887-00-6
D-4S	03/23/2017	Chloride	39.0	mg/l	16887-00-6
D-4S	03/23/2017	Chloride	45.2	mg/l	16887-00-6
D-4S	04/25/2017	Chloride	47.4	mg/l	16887-00-6
D-4S	05/16/2017	Chloride	45.3	mg/l	16887-00-6
D-4S	06/28/2017	Chloride	47.0	mg/l	16887-00-6
D-4S	06/28/2017	Chloride	47.7	mg/l	16887-00-6
D-4S	07/26/2017	Chloride	44.0	mg/l	16887-00-6
D-4S	08/15/2017	Chloride	43.9	mg/l	16887-00-6
D-4S	09/06/2017	Chloride	45.5	mg/l	16887-00-6
D-4S	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	03/23/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	04/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	06/28/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	07/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	09/06/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-4S	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	03/23/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	04/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	05/16/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	06/28/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	07/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	08/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	09/06/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-4S	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4S	03/23/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4S	04/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-4S	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-4S	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-4S	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4S	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4S	09/06/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-4S	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	03/23/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	03/23/2017	Lead	< 10.0	ug/l	7439-92-1
D-4S	04/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-4S	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-4S	09/06/2017	Lead	< 0.010	mg/l	7439-92-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4S	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	03/23/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	04/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-4S	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	03/23/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	04/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-4S	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	03/23/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	04/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-4S	02/21/2017	pH	7.6	pH UNITS	PH
D-4S	03/23/2017	pH	7.5	pH UNITS	PH
D-4S	03/23/2017	pH	7.7	pH UNITS	PH
D-4S	04/25/2017	pH	7.9	pH UNITS	PH
D-4S	05/16/2017	pH	7.4	pH UNITS	PH
D-4S	06/28/2017	pH	7.5	pH UNITS	PH
D-4S	06/28/2017	pH	7.6	pH UNITS	PH
D-4S	07/26/2017	pH	7.7	pH UNITS	PH
D-4S	08/15/2017	pH	7.6	pH UNITS	PH
D-4S	09/06/2017	pH	7.7	pH UNITS	PH
D-4S	02/21/2017	Radium (226)	< 47.7	pci/l	13982-63-3
D-4S	03/23/2017	Radium (226)	< 43.4	pci/l	13982-63-3
D-4S	04/25/2017	Radium (226)	74.9	pci/l	13982-63-3
D-4S	05/16/2017	Radium (226)	< 0.105	pci/l	13982-63-3
D-4S	06/28/2017	Radium (226)	0.120	pci/l	13982-63-3
D-4S	07/26/2017	Radium (226)	< 0.0759	pci/l	13982-63-3
D-4S	08/15/2017	Radium (226)	0.0790	pci/l	13982-63-3
D-4S	09/06/2017	Radium (226)	< 0.0716	pci/l	13982-63-3
D-4S	02/21/2017	Radium 228	< 28.4	pci/l	15262-20-1
D-4S	03/23/2017	Radium 228	< 24.4	pci/l	15262-20-1
D-4S	04/25/2017	Radium 228	< 46.0	pci/l	15262-20-1
D-4S	05/16/2017	Radium 228	< 0.395	pci/l	15262-20-1
D-4S	06/28/2017	Radium 228	< 0.380	pci/l	15262-20-1
D-4S	07/26/2017	Radium 228	< 0.374	pci/l	15262-20-1
D-4S	08/15/2017	Radium 228	0.356	pci/l	15262-20-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-4S	09/06/2017	Radium 228	0.710	pci/l	15262-20-1
D-4S	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	03/23/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	04/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	06/28/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-4S	02/21/2017	Sulfate as SO4	29.0	mg/l	14808-79-8
D-4S	03/23/2017	Sulfate as SO4	33.8	mg/l	14808-79-8
D-4S	03/23/2017	Sulfate as SO4	34.7	mg/l	14808-79-8
D-4S	04/25/2017	Sulfate as SO4	31.1	mg/l	14808-79-8
D-4S	05/16/2017	Sulfate as SO4	33.5	mg/l	14808-79-8
D-4S	06/28/2017	Sulfate as SO4	31.0	mg/l	14808-79-8
D-4S	06/28/2017	Sulfate as SO4	31.4	mg/l	14808-79-8
D-4S	07/26/2017	Sulfate as SO4	28.6	mg/l	14808-79-8
D-4S	08/15/2017	Sulfate as SO4	28.2	mg/l	14808-79-8
D-4S	09/06/2017	Sulfate as SO4	26.7	mg/l	14808-79-8
D-4S	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	03/23/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	04/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-4S	02/21/2017	Total Dissolved Solids	438	mg/l	TDS
D-4S	03/23/2017	Total Dissolved Solids	418	mg/l	TDS
D-4S	03/23/2017	Total Dissolved Solids	427	mg/l	TDS
D-4S	04/25/2017	Total Dissolved Solids	413	mg/l	TDS
D-4S	05/16/2017	Total Dissolved Solids	429	mg/l	TDS
D-4S	06/28/2017	Total Dissolved Solids	451	mg/l	TDS
D-4S	07/26/2017	Total Dissolved Solids	434	mg/l	TDS
D-4S	08/15/2017	Total Dissolved Solids	467	mg/l	TDS
D-4S	09/06/2017	Total Dissolved Solids	424	mg/l	TDS
D-5D	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5D	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5D	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5D	02/21/2017	Barium	0.055	mg/l	7440-39-3
D-5D	03/22/2017	Barium	0.050	mg/l	7440-39-3
D-5D	04/24/2017	Barium	0.054	mg/l	7440-39-3
D-5D	05/15/2017	Barium	0.052	mg/l	7440-39-3
D-5D	06/27/2017	Barium	0.051	mg/l	7440-39-3
D-5D	07/25/2017	Barium	0.053	mg/l	7440-39-3
D-5D	08/14/2017	Barium	0.053	mg/l	7440-39-3
D-5D	09/05/2017	Barium	0.051	mg/l	7440-39-3
D-5D	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5D	02/21/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	03/22/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	05/15/2017	Boron	0.020	mg/l	7440-42-8
D-5D	06/27/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	07/25/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	08/14/2017	Boron	< 0.020	mg/l	7440-42-8
D-5D	09/05/2017	Boron	0.023	mg/l	7440-42-8
D-5D	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5D	02/21/2017	Calcium	85.4	mg/l	7440-70-2
D-5D	03/22/2017	Calcium	94.2	mg/l	7440-70-2
D-5D	04/24/2017	Calcium	101	mg/l	7440-70-2
D-5D	05/15/2017	Calcium	99.2	mg/l	7440-70-2
D-5D	06/27/2017	Calcium	99.2	mg/l	7440-70-2
D-5D	06/27/2017	Calcium	99.8	mg/l	7440-70-2
D-5D	07/25/2017	Calcium	98.5	mg/l	7440-70-2
D-5D	08/14/2017	Calcium	95.1	mg/l	7440-70-2
D-5D	09/05/2017	Calcium	93.8	mg/l	7440-70-2
D-5D	02/21/2017	Chloride	29.0	mg/l	16887-00-6
D-5D	03/22/2017	Chloride	23.9	mg/l	16887-00-6
D-5D	04/24/2017	Chloride	24.3	mg/l	16887-00-6
D-5D	05/15/2017	Chloride	23.1	mg/l	16887-00-6
D-5D	06/27/2017	Chloride	23.5	mg/l	16887-00-6

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5D	06/27/2017	Chloride	24.1	mg/l	16887-00-6
D-5D	07/25/2017	Chloride	22.2	mg/l	16887-00-6
D-5D	08/14/2017	Chloride	22.4	mg/l	16887-00-6
D-5D	09/05/2017	Chloride	22.8	mg/l	16887-00-6
D-5D	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5D	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5D	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5D	03/22/2017	Fluoride	0.12	mg/l	16984-48-8
D-5D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5D	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5D	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5D	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5D	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5D	09/05/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5D	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-5D	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
D-5D	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5D	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5D	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5D	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5D	02/21/2017	pH	7.5	pH UNITS	PH
D-5D	03/22/2017	pH	7.8	pH UNITS	PH
D-5D	04/24/2017	pH	7.9	pH UNITS	PH
D-5D	05/15/2017	pH	7.5	pH UNITS	PH
D-5D	06/27/2017	pH	7.5	pH UNITS	PH
D-5D	06/27/2017	pH	7.6	pH UNITS	PH
D-5D	07/25/2017	pH	7.7	pH UNITS	PH
D-5D	08/14/2017	pH	7.6	pH UNITS	PH
D-5D	09/05/2017	pH	7.7	pH UNITS	PH
D-5D	02/21/2017	Radium (226)	< 47.2	pci/l	13982-63-3
D-5D	03/22/2017	Radium (226)	18.7	pci/l	13982-63-3
D-5D	04/24/2017	Radium (226)	< 60.8	pci/l	13982-63-3
D-5D	05/15/2017	Radium (226)	< 0.0875	pci/l	13982-63-3
D-5D	06/27/2017	Radium (226)	< 0.0859	pci/l	13982-63-3
D-5D	07/25/2017	Radium (226)	< 0.0854	pci/l	13982-63-3
D-5D	08/14/2017	Radium (226)	0.132	pci/l	13982-63-3
D-5D	09/05/2017	Radium (226)	0.0634	pci/l	13982-63-3
D-5D	02/21/2017	Radium 228	< 33.8	pci/l	15262-20-1
D-5D	03/22/2017	Radium 228	< 27.2	pci/l	15262-20-1
D-5D	04/24/2017	Radium 228	< 31.0	pci/l	15262-20-1
D-5D	05/15/2017	Radium 228	< 0.352	pci/l	15262-20-1
D-5D	06/27/2017	Radium 228	< 0.277	pci/l	15262-20-1
D-5D	07/25/2017	Radium 228	< 0.360	pci/l	15262-20-1
D-5D	08/14/2017	Radium 228	< 0.304	pci/l	15262-20-1
D-5D	09/05/2017	Radium 228	0.629	pci/l	15262-20-1
D-5D	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	05/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	06/27/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5D	02/21/2017	Sulfate as SO4	28.4	mg/l	14808-79-8
D-5D	03/22/2017	Sulfate as SO4	34.4	mg/l	14808-79-8
D-5D	04/24/2017	Sulfate as SO4	33.2	mg/l	14808-79-8
D-5D	05/15/2017	Sulfate as SO4	33.1	mg/l	14808-79-8



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5D	06/27/2017	Sulfate as SO4	33.2	mg/l	14808-79-8
D-5D	06/27/2017	Sulfate as SO4	34.3	mg/l	14808-79-8
D-5D	07/25/2017	Sulfate as SO4	31.4	mg/l	14808-79-8
D-5D	08/14/2017	Sulfate as SO4	32.4	mg/l	14808-79-8
D-5D	09/05/2017	Sulfate as SO4	30.4	mg/l	14808-79-8
D-5D	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5D	02/21/2017	Total Dissolved Solids	398	mg/l	TDS
D-5D	03/22/2017	Total Dissolved Solids	420	mg/l	TDS
D-5D	04/24/2017	Total Dissolved Solids	414	mg/l	TDS
D-5D	05/15/2017	Total Dissolved Solids	423	mg/l	TDS
D-5D	06/27/2017	Total Dissolved Solids	408	mg/l	TDS
D-5D	06/27/2017	Total Dissolved Solids	444	mg/l	TDS
D-5D	07/25/2017	Total Dissolved Solids	420	mg/l	TDS
D-5D	08/14/2017	Total Dissolved Solids	467	mg/l	TDS
D-5D	09/05/2017	Total Dissolved Solids	435	mg/l	TDS
D-5S2	02/21/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	03/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	06/27/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
D-5S2	02/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	03/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	06/27/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-5S2	02/21/2017	Barium	0.069	mg/l	7440-39-3
D-5S2	03/22/2017	Barium	0.072	mg/l	7440-39-3
D-5S2	04/24/2017	Barium	0.075	mg/l	7440-39-3
D-5S2	05/15/2017	Barium	0.072	mg/l	7440-39-3
D-5S2	06/27/2017	Barium	0.071	mg/l	7440-39-3
D-5S2	07/25/2017	Barium	0.073	mg/l	7440-39-3
D-5S2	08/14/2017	Barium	0.076	mg/l	7440-39-3
D-5S2	09/05/2017	Barium	0.072	mg/l	7440-39-3
D-5S2	02/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	03/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5S2	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	06/27/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-5S2	02/21/2017	Boron	0.048	mg/l	7440-42-8
D-5S2	03/22/2017	Boron	0.050	mg/l	7440-42-8
D-5S2	04/24/2017	Boron	0.051	mg/l	7440-42-8
D-5S2	05/15/2017	Boron	0.056	mg/l	7440-42-8
D-5S2	06/27/2017	Boron	0.054	mg/l	7440-42-8
D-5S2	07/25/2017	Boron	0.053	mg/l	7440-42-8
D-5S2	08/14/2017	Boron	0.058	mg/l	7440-42-8
D-5S2	09/05/2017	Boron	0.062	mg/l	7440-42-8
D-5S2	02/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	03/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	06/27/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-5S2	02/21/2017	Calcium	115	mg/l	7440-70-2
D-5S2	03/22/2017	Calcium	118	mg/l	7440-70-2
D-5S2	03/22/2017	Calcium	119	mg/l	7440-70-2
D-5S2	04/24/2017	Calcium	122	mg/l	7440-70-2
D-5S2	05/15/2017	Calcium	118	mg/l	7440-70-2
D-5S2	06/27/2017	Calcium	121	mg/l	7440-70-2
D-5S2	07/25/2017	Calcium	119	mg/l	7440-70-2
D-5S2	08/14/2017	Calcium	119	mg/l	7440-70-2
D-5S2	09/05/2017	Calcium	117	mg/l	7440-70-2
D-5S2	02/21/2017	Chloride	40.1	mg/l	16887-00-6
D-5S2	03/22/2017	Chloride	41.9	mg/l	16887-00-6
D-5S2	03/22/2017	Chloride	42.9	mg/l	16887-00-6
D-5S2	04/24/2017	Chloride	46.9	mg/l	16887-00-6
D-5S2	05/15/2017	Chloride	47.7	mg/l	16887-00-6
D-5S2	06/27/2017	Chloride	47.5	mg/l	16887-00-6
D-5S2	06/27/2017	Chloride	49.9	mg/l	16887-00-6
D-5S2	07/25/2017	Chloride	51.3	mg/l	16887-00-6
D-5S2	08/14/2017	Chloride	48.6	mg/l	16887-00-6
D-5S2	09/05/2017	Chloride	52.1	mg/l	16887-00-6
D-5S2	02/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	03/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	06/27/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-5S2	02/21/2017	Cobalt	< 0.30	ug/l	7440-48-4

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5S2	03/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	05/15/2017	Cobalt	0.32	ug/l	7440-48-4
D-5S2	06/27/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-5S2	02/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5S2	03/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-5S2	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	06/27/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	07/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	08/14/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	09/05/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-5S2	02/21/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	03/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	03/22/2017	Lead	< 10.0	ug/l	7439-92-1
D-5S2	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	06/27/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	06/27/2017	Lead	< 10.0	ug/l	7439-92-1
D-5S2	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
D-5S2	02/21/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	03/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	06/27/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
D-5S2	02/21/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	03/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	06/27/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
D-5S2	02/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	03/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	06/27/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-5S2	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5S2	02/21/2017	pH	7.4	pH UNITS	PH
D-5S2	03/22/2017	pH	7.5	pH UNITS	PH
D-5S2	03/22/2017	pH	7.7	pH UNITS	PH
D-5S2	04/24/2017	pH	7.8	pH UNITS	PH
D-5S2	05/15/2017	pH	7.4	pH UNITS	PH
D-5S2	06/27/2017	pH	7.4	pH UNITS	PH
D-5S2	06/27/2017	pH	7.5	pH UNITS	PH
D-5S2	07/25/2017	pH	7.6	pH UNITS	PH
D-5S2	08/14/2017	pH	7.6	pH UNITS	PH
D-5S2	09/05/2017	pH	7.6	pH UNITS	PH
D-5S2	02/21/2017	Radium (226)	< 24.5	pci/l	13982-63-3
D-5S2	03/22/2017	Radium (226)	20.6	pci/l	13982-63-3
D-5S2	04/24/2017	Radium (226)	< 62.1	pci/l	13982-63-3
D-5S2	05/15/2017	Radium (226)	< 0.108	pci/l	13982-63-3
D-5S2	06/27/2017	Radium (226)	0.0859	pci/l	13982-63-3
D-5S2	07/25/2017	Radium (226)	< 0.0835	pci/l	13982-63-3
D-5S2	08/14/2017	Radium (226)	0.138	pci/l	13982-63-3
D-5S2	09/05/2017	Radium (226)	0.102	pci/l	13982-63-3
D-5S2	02/21/2017	Radium 228	< 49.6	pci/l	15262-20-1
D-5S2	03/22/2017	Radium 228	< 26.9	pci/l	15262-20-1
D-5S2	04/24/2017	Radium 228	< 42.4	pci/l	15262-20-1
D-5S2	05/15/2017	Radium 228	< 0.409	pci/l	15262-20-1
D-5S2	06/27/2017	Radium 228	< 0.275	pci/l	15262-20-1
D-5S2	07/25/2017	Radium 228	0.425	pci/l	15262-20-1
D-5S2	08/14/2017	Radium 228	< 0.364	pci/l	15262-20-1
D-5S2	09/05/2017	Radium 228	0.768	pci/l	15262-20-1
D-5S2	02/21/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	03/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	05/15/2017	Selenium	1.7	ug/l	7782-49-2
D-5S2	06/27/2017	Selenium	1.1	ug/l	7782-49-2
D-5S2	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
D-5S2	02/21/2017	Sulfate as SO4	41.6	mg/l	14808-79-8
D-5S2	03/22/2017	Sulfate as SO4	46.1	mg/l	14808-79-8
D-5S2	03/22/2017	Sulfate as SO4	47.3	mg/l	14808-79-8
D-5S2	04/24/2017	Sulfate as SO4	48.9	mg/l	14808-79-8
D-5S2	05/15/2017	Sulfate as SO4	53.0	mg/l	14808-79-8
D-5S2	06/27/2017	Sulfate as SO4	49.2	mg/l	14808-79-8
D-5S2	06/27/2017	Sulfate as SO4	49.3	mg/l	14808-79-8
D-5S2	07/25/2017	Sulfate as SO4	46.2	mg/l	14808-79-8
D-5S2	08/14/2017	Sulfate as SO4	47.9	mg/l	14808-79-8
D-5S2	09/05/2017	Sulfate as SO4	47.2	mg/l	14808-79-8
D-5S2	02/21/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	03/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	06/27/2017	Thallium	< 0.20	ug/l	7440-28-0

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-5S2	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
D-5S2	02/21/2017	Total Dissolved Solids	502	mg/l	TDS
D-5S2	03/22/2017	Total Dissolved Solids	486	mg/l	TDS
D-5S2	03/22/2017	Total Dissolved Solids	517	mg/l	TDS
D-5S2	04/24/2017	Total Dissolved Solids	500	mg/l	TDS
D-5S2	05/15/2017	Total Dissolved Solids	498	mg/l	TDS
D-5S2	06/27/2017	Total Dissolved Solids	500	mg/l	TDS
D-5S2	06/27/2017	Total Dissolved Solids	502	mg/l	TDS
D-5S2	07/25/2017	Total Dissolved Solids	525	mg/l	TDS
D-5S2	08/14/2017	Total Dissolved Solids	614	mg/l	TDS
D-5S2	09/05/2017	Total Dissolved Solids	556	mg/l	TDS
D-8	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	03/23/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	04/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-8	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	03/23/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	04/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-8	02/22/2017	Barium	0.064	mg/l	7440-39-3
D-8	02/22/2017	Barium	0.067	mg/l	7440-39-3
D-8	03/23/2017	Barium	0.050	mg/l	7440-39-3
D-8	04/25/2017	Barium	0.056	mg/l	7440-39-3
D-8	05/16/2017	Barium	0.054	mg/l	7440-39-3
D-8	06/28/2017	Barium	0.053	mg/l	7440-39-3
D-8	07/26/2017	Barium	0.050	mg/l	7440-39-3
D-8	08/15/2017	Barium	0.046	mg/l	7440-39-3
D-8	09/06/2017	Barium	0.054	mg/l	7440-39-3
D-8	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	03/23/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	04/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-8	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-8	02/22/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	02/22/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	03/23/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	04/25/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	05/16/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	06/28/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	07/26/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	08/15/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	09/06/2017	Boron	< 0.020	mg/l	7440-42-8
D-8	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	03/23/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	04/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-8	02/22/2017	Calcium	80.9	mg/l	7440-70-2
D-8	02/22/2017	Calcium	82.5	mg/l	7440-70-2
D-8	03/23/2017	Calcium	74.9	mg/l	7440-70-2
D-8	03/23/2017	Calcium	75.2	mg/l	7440-70-2
D-8	04/25/2017	Calcium	75.3	mg/l	7440-70-2
D-8	05/16/2017	Calcium	82.0	mg/l	7440-70-2
D-8	06/28/2017	Calcium	81.1	mg/l	7440-70-2
D-8	06/28/2017	Calcium	84.1	mg/l	7440-70-2
D-8	07/26/2017	Calcium	67.2	mg/l	7440-70-2
D-8	08/15/2017	Calcium	66.9	mg/l	7440-70-2
D-8	09/06/2017	Calcium	65.1	mg/l	7440-70-2
D-8	02/22/2017	Chloride	17.1	mg/l	16887-00-6
D-8	02/22/2017	Chloride	17.3	mg/l	16887-00-6
D-8	03/23/2017	Chloride	17.9	mg/l	16887-00-6
D-8	03/23/2017	Chloride	18.4	mg/l	16887-00-6
D-8	04/25/2017	Chloride	17.8	mg/l	16887-00-6
D-8	05/16/2017	Chloride	18.8	mg/l	16887-00-6
D-8	06/28/2017	Chloride	20.5	mg/l	16887-00-6
D-8	06/28/2017	Chloride	20.7	mg/l	16887-00-6
D-8	07/26/2017	Chloride	17.0	mg/l	16887-00-6
D-8	08/15/2017	Chloride	16.7	mg/l	16887-00-6
D-8	09/06/2017	Chloride	16.1	mg/l	16887-00-6
D-8	02/22/2017	Chromium	0.0049	mg/l	7440-47-3
D-8	02/22/2017	Chromium	0.0078	mg/l	7440-47-3
D-8	03/23/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	04/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	05/16/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	06/28/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	07/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	08/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-8	09/06/2017	Chromium	0.0046	mg/l	7440-47-3

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-8	02/22/2017	Cobalt	1.1	ug/l	7440-48-4
D-8	02/22/2017	Cobalt	1.4	ug/l	7440-48-4
D-8	03/23/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-8	04/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
D-8	05/16/2017	Cobalt	0.32	ug/l	7440-48-4
D-8	06/28/2017	Cobalt	0.37	ug/l	7440-48-4
D-8	07/26/2017	Cobalt	0.66	ug/l	7440-48-4
D-8	08/15/2017	Cobalt	0.54	ug/l	7440-48-4
D-8	09/06/2017	Cobalt	0.58	ug/l	7440-48-4
D-8	02/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-8	02/22/2017	Fluoride	0.10	mg/l	16984-48-8
D-8	03/23/2017	Fluoride	0.10	mg/l	16984-48-8
D-8	04/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-8	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-8	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-8	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-8	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-8	09/06/2017	Fluoride	0.11	mg/l	16984-48-8
D-8	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	03/23/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	03/23/2017	Lead	< 10.0	ug/l	7439-92-1
D-8	04/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-8	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-8	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	03/23/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	04/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-8	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	03/23/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	04/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-8	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-8	03/23/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	04/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-8	02/22/2017	pH	7.8	pH UNITS	PH
D-8	02/22/2017	pH	7.8	pH UNITS	PH
D-8	03/23/2017	pH	7.8	pH UNITS	PH
D-8	03/23/2017	pH	7.9	pH UNITS	PH
D-8	04/25/2017	pH	8.1	pH UNITS	PH
D-8	05/16/2017	pH	7.7	pH UNITS	PH
D-8	06/28/2017	pH	7.8	pH UNITS	PH
D-8	07/26/2017	pH	8.0	pH UNITS	PH
D-8	08/15/2017	pH	7.9	pH UNITS	PH
D-8	09/06/2017	pH	8.1	pH UNITS	PH
D-8	02/22/2017	Radium (226)	< 48.8	pci/l	13982-63-3
D-8	02/22/2017	Radium (226)	< 48.8	pci/l	13982-63-3
D-8	03/23/2017	Radium (226)	21.5	pci/l	13982-63-3
D-8	04/25/2017	Radium (226)	69.8	pci/l	13982-63-3
D-8	05/16/2017	Radium (226)	< 0.105	pci/l	13982-63-3
D-8	06/28/2017	Radium (226)	0.112	pci/l	13982-63-3
D-8	07/26/2017	Radium (226)	< 0.0876	pci/l	13982-63-3
D-8	08/15/2017	Radium (226)	0.130	pci/l	13982-63-3
D-8	09/06/2017	Radium (226)	0.123	pci/l	13982-63-3
D-8	02/22/2017	Radium 228	< 43.1	pci/l	15262-20-1
D-8	02/22/2017	Radium 228	< 33.2	pci/l	15262-20-1
D-8	03/23/2017	Radium 228	< 28.2	pci/l	15262-20-1
D-8	04/25/2017	Radium 228	< 37.4	pci/l	15262-20-1
D-8	05/16/2017	Radium 228	< 0.423	pci/l	15262-20-1
D-8	06/28/2017	Radium 228	< 0.272	pci/l	15262-20-1
D-8	07/26/2017	Radium 228	< 0.344	pci/l	15262-20-1
D-8	08/15/2017	Radium 228	< 0.312	pci/l	15262-20-1
D-8	09/06/2017	Radium 228	0.830	pci/l	15262-20-1
D-8	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	03/23/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	04/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	06/28/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-8	02/22/2017	Sulfate as SO4	40.0	mg/l	14808-79-8
D-8	02/22/2017	Sulfate as SO4	39.8	mg/l	14808-79-8
D-8	03/23/2017	Sulfate as SO4	44.2	mg/l	14808-79-8
D-8	03/23/2017	Sulfate as SO4	46.1	mg/l	14808-79-8
D-8	04/25/2017	Sulfate as SO4	41.7	mg/l	14808-79-8



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-8	05/16/2017	Sulfate as SO4	52.8	mg/l	14808-79-8
D-8	06/28/2017	Sulfate as SO4	46.1	mg/l	14808-79-8
D-8	06/28/2017	Sulfate as SO4	48.2	mg/l	14808-79-8
D-8	07/26/2017	Sulfate as SO4	36.1	mg/l	14808-79-8
D-8	08/15/2017	Sulfate as SO4	33.6	mg/l	14808-79-8
D-8	09/06/2017	Sulfate as SO4	33.0	mg/l	14808-79-8
D-8	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	03/23/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	04/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-8	02/22/2017	Total Dissolved Solids	387	mg/l	TDS
D-8	03/23/2017	Total Dissolved Solids	338	mg/l	TDS
D-8	03/23/2017	Total Dissolved Solids	365	mg/l	TDS
D-8	04/25/2017	Total Dissolved Solids	344	mg/l	TDS
D-8	05/16/2017	Total Dissolved Solids	354	mg/l	TDS
D-8	06/28/2017	Total Dissolved Solids	416	mg/l	TDS
D-8	07/26/2017	Total Dissolved Solids	323	mg/l	TDS
D-8	08/15/2017	Total Dissolved Solids	342	mg/l	TDS
D-8	09/06/2017	Total Dissolved Solids	311	mg/l	TDS
D-9	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	03/23/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	04/25/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	05/16/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	06/28/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	07/26/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	08/15/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	09/06/2017	Antimony	< 1.0	ug/l	7440-36-0
D-9	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	03/23/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	04/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	05/16/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	06/28/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	07/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	08/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	09/06/2017	Arsenic	< 1.0	ug/l	7440-38-2
D-9	02/22/2017	Barium	0.062	mg/l	7440-39-3
D-9	03/23/2017	Barium	0.061	mg/l	7440-39-3
D-9	04/25/2017	Barium	0.064	mg/l	7440-39-3
D-9	05/16/2017	Barium	0.061	mg/l	7440-39-3
D-9	06/28/2017	Barium	0.062	mg/l	7440-39-3
D-9	07/26/2017	Barium	0.068	mg/l	7440-39-3
D-9	08/15/2017	Barium	0.057	mg/l	7440-39-3
D-9	09/06/2017	Barium	0.058	mg/l	7440-39-3
D-9	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-9	03/23/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	04/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	05/16/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	06/28/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	07/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	08/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	09/06/2017	Beryllium	< 0.70	ug/l	7440-41-7
D-9	02/22/2017	Boron	0.020	mg/l	7440-42-8
D-9	03/23/2017	Boron	< 0.020	mg/l	7440-42-8
D-9	04/25/2017	Boron	0.021	mg/l	7440-42-8
D-9	05/16/2017	Boron	0.020	mg/l	7440-42-8
D-9	06/28/2017	Boron	0.021	mg/l	7440-42-8
D-9	07/26/2017	Boron	< 0.020	mg/l	7440-42-8
D-9	08/15/2017	Boron	0.021	mg/l	7440-42-8
D-9	09/06/2017	Boron	0.021	mg/l	7440-42-8
D-9	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	03/23/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	04/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	05/16/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	06/28/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	07/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	08/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	09/06/2017	Cadmium	< 0.50	ug/l	7440-43-9
D-9	02/22/2017	Calcium	103	mg/l	7440-70-2
D-9	03/23/2017	Calcium	102	mg/l	7440-70-2
D-9	03/23/2017	Calcium	94.8	mg/l	7440-70-2
D-9	04/25/2017	Calcium	99.0	mg/l	7440-70-2
D-9	05/16/2017	Calcium	94.5	mg/l	7440-70-2
D-9	06/28/2017	Calcium	100	mg/l	7440-70-2
D-9	07/26/2017	Calcium	95.3	mg/l	7440-70-2
D-9	08/15/2017	Calcium	91.8	mg/l	7440-70-2
D-9	09/06/2017	Calcium	83.5	mg/l	7440-70-2
D-9	02/22/2017	Chloride	45.2	mg/l	16887-00-6
D-9	03/23/2017	Chloride	44.4	mg/l	16887-00-6
D-9	03/23/2017	Chloride	45.1	mg/l	16887-00-6
D-9	04/25/2017	Chloride	46.5	mg/l	16887-00-6
D-9	05/16/2017	Chloride	44.7	mg/l	16887-00-6
D-9	06/28/2017	Chloride	44.5	mg/l	16887-00-6
D-9	06/28/2017	Chloride	45.5	mg/l	16887-00-6
D-9	07/26/2017	Chloride	42.4	mg/l	16887-00-6
D-9	08/15/2017	Chloride	41.7	mg/l	16887-00-6
D-9	09/06/2017	Chloride	39.9	mg/l	16887-00-6
D-9	02/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-9	03/23/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-9	04/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-9	05/16/2017	Chromium	0.0045	mg/l	7440-47-3
D-9	06/28/2017	Chromium	< 0.0040	mg/l	7440-47-3
D-9	07/26/2017	Chromium	0.0096	mg/l	7440-47-3
D-9	08/15/2017	Chromium	0.0057	mg/l	7440-47-3

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Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-9	09/06/2017	Chromium	0.0068	mg/l	7440-47-3
D-9	02/22/2017	Cobalt	0.74	ug/l	7440-48-4
D-9	03/23/2017	Cobalt	0.49	ug/l	7440-48-4
D-9	04/25/2017	Cobalt	0.80	ug/l	7440-48-4
D-9	05/16/2017	Cobalt	0.80	ug/l	7440-48-4
D-9	06/28/2017	Cobalt	0.51	ug/l	7440-48-4
D-9	07/26/2017	Cobalt	1.2	ug/l	7440-48-4
D-9	08/15/2017	Cobalt	0.53	ug/l	7440-48-4
D-9	09/06/2017	Cobalt	0.88	ug/l	7440-48-4
D-9	02/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-9	03/23/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-9	04/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-9	05/16/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-9	06/28/2017	Fluoride	< 0.25	mg/l	16984-48-8
D-9	07/26/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-9	08/15/2017	Fluoride	< 0.10	mg/l	16984-48-8
D-9	09/06/2017	Fluoride	0.11	mg/l	16984-48-8
D-9	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	03/23/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	03/23/2017	Lead	< 10.0	ug/l	7439-92-1
D-9	04/25/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	05/16/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	06/28/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	06/28/2017	Lead	< 10.0	ug/l	7439-92-1
D-9	07/26/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	08/15/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	09/06/2017	Lead	< 0.010	mg/l	7439-92-1
D-9	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	03/23/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	04/25/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	05/16/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	06/28/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	07/26/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	08/15/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	09/06/2017	Lithium	< 0.030	mg/l	7439-93-2
D-9	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	03/23/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	04/25/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	05/16/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	06/28/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	07/26/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	08/15/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	09/06/2017	Mercury	< 0.20	ug/l	7439-97-6
D-9	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	03/23/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	04/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	05/16/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	06/28/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	07/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-9	08/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	09/06/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
D-9	02/22/2017	pH	7.7	pH UNITS	PH
D-9	03/23/2017	pH	7.5	pH UNITS	PH
D-9	03/23/2017	pH	7.7	pH UNITS	PH
D-9	04/25/2017	pH	8.0	pH UNITS	PH
D-9	05/16/2017	pH	7.5	pH UNITS	PH
D-9	06/28/2017	pH	7.7	pH UNITS	PH
D-9	07/26/2017	pH	7.8	pH UNITS	PH
D-9	08/15/2017	pH	7.7	pH UNITS	PH
D-9	09/06/2017	pH	7.8	pH UNITS	PH
D-9	02/22/2017	Radium (226)	< 42.3	pci/l	13982-63-3
D-9	03/23/2017	Radium (226)	21.6	pci/l	13982-63-3
D-9	04/25/2017	Radium (226)	97.1	pci/l	13982-63-3
D-9	05/16/2017	Radium (226)	< 0.123	pci/l	13982-63-3
D-9	06/28/2017	Radium (226)	< 0.107	pci/l	13982-63-3
D-9	07/26/2017	Radium (226)	0.0985	pci/l	13982-63-3
D-9	08/15/2017	Radium (226)	0.161	pci/l	13982-63-3
D-9	09/06/2017	Radium (226)	< 0.0737	pci/l	13982-63-3
D-9	02/22/2017	Radium 228	< 42.3	pci/l	15262-20-1
D-9	03/23/2017	Radium 228	32.4	pci/l	15262-20-1
D-9	04/25/2017	Radium 228	< 36.8	pci/l	15262-20-1
D-9	05/16/2017	Radium 228	< 0.497	pci/l	15262-20-1
D-9	06/28/2017	Radium 228	< 0.263	pci/l	15262-20-1
D-9	07/26/2017	Radium 228	< 0.360	pci/l	15262-20-1
D-9	08/15/2017	Radium 228	< 0.370	pci/l	15262-20-1
D-9	09/06/2017	Radium 228	0.727	pci/l	15262-20-1
D-9	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	03/23/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	04/25/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	05/16/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	06/28/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	07/26/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	08/15/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	09/06/2017	Selenium	< 1.0	ug/l	7782-49-2
D-9	02/22/2017	Sulfate as SO4	28.2	mg/l	14808-79-8
D-9	03/23/2017	Sulfate as SO4	27.4	mg/l	14808-79-8
D-9	03/23/2017	Sulfate as SO4	28.2	mg/l	14808-79-8
D-9	04/25/2017	Sulfate as SO4	33.7	mg/l	14808-79-8
D-9	05/16/2017	Sulfate as SO4	33.6	mg/l	14808-79-8
D-9	06/28/2017	Sulfate as SO4	27.8	mg/l	14808-79-8
D-9	06/28/2017	Sulfate as SO4	28.1	mg/l	14808-79-8
D-9	07/26/2017	Sulfate as SO4	27.1	mg/l	14808-79-8
D-9	08/15/2017	Sulfate as SO4	24.6	mg/l	14808-79-8
D-9	09/06/2017	Sulfate as SO4	23.3	mg/l	14808-79-8
D-9	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	03/23/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	04/25/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	05/16/2017	Thallium	< 0.20	ug/l	7440-28-0

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
D-9	06/28/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	07/26/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	08/15/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	09/06/2017	Thallium	< 0.20	ug/l	7440-28-0
D-9	02/22/2017	Total Dissolved Solids	441	mg/l	TDS
D-9	03/23/2017	Total Dissolved Solids	414	mg/l	TDS
D-9	04/25/2017	Total Dissolved Solids	410	mg/l	TDS
D-9	05/16/2017	Total Dissolved Solids	435	mg/l	TDS
D-9	06/28/2017	Total Dissolved Solids	458	mg/l	TDS
D-9	07/26/2017	Total Dissolved Solids	453	mg/l	TDS
D-9	08/15/2017	Total Dissolved Solids	452	mg/l	TDS
D-9	09/06/2017	Total Dissolved Solids	450	mg/l	TDS
U-4D	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	03/21/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	06/26/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4D	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	03/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	06/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4D	02/22/2017	Barium	0.042	mg/l	7440-39-3
U-4D	03/21/2017	Barium	0.041	mg/l	7440-39-3
U-4D	04/24/2017	Barium	0.043	mg/l	7440-39-3
U-4D	05/15/2017	Barium	0.042	mg/l	7440-39-3
U-4D	06/26/2017	Barium	0.042	mg/l	7440-39-3
U-4D	07/25/2017	Barium	0.041	mg/l	7440-39-3
U-4D	08/14/2017	Barium	0.042	mg/l	7440-39-3
U-4D	09/05/2017	Barium	0.042	mg/l	7440-39-3
U-4D	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	03/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	06/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4D	02/22/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	03/21/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	05/15/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	06/26/2017	Boron	< 0.020	mg/l	7440-42-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4D	07/25/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	08/14/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	09/05/2017	Boron	< 0.020	mg/l	7440-42-8
U-4D	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	03/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	06/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4D	02/22/2017	Calcium	91.8	mg/l	7440-70-2
U-4D	03/21/2017	Calcium	87.7	mg/l	7440-70-2
U-4D	03/21/2017	Calcium	91.9	mg/l	7440-70-2
U-4D	04/24/2017	Calcium	92.6	mg/l	7440-70-2
U-4D	05/15/2017	Calcium	90.5	mg/l	7440-70-2
U-4D	06/26/2017	Calcium	87.3	mg/l	7440-70-2
U-4D	06/26/2017	Calcium	93.7	mg/l	7440-70-2
U-4D	07/25/2017	Calcium	88.1	mg/l	7440-70-2
U-4D	08/14/2017	Calcium	88.2	mg/l	7440-70-2
U-4D	09/05/2017	Calcium	89.2	mg/l	7440-70-2
U-4D	02/22/2017	Chloride	39.5	mg/l	16887-00-6
U-4D	03/21/2017	Chloride	39.8	mg/l	16887-00-6
U-4D	03/21/2017	Chloride	40.8	mg/l	16887-00-6
U-4D	04/24/2017	Chloride	41.6	mg/l	16887-00-6
U-4D	05/15/2017	Chloride	40.8	mg/l	16887-00-6
U-4D	06/26/2017	Chloride	40.0	mg/l	16887-00-6
U-4D	06/26/2017	Chloride	40.2	mg/l	16887-00-6
U-4D	07/25/2017	Chloride	37.3	mg/l	16887-00-6
U-4D	08/14/2017	Chloride	37.0	mg/l	16887-00-6
U-4D	09/05/2017	Chloride	37.9	mg/l	16887-00-6
U-4D	02/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	03/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	06/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-4D	02/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	03/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	06/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4D	02/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4D	03/21/2017	Fluoride	0.11	mg/l	16984-48-8



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4D	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4D	06/26/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4D	07/25/2017	Fluoride	0.10	mg/l	16984-48-8
U-4D	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4D	09/05/2017	Fluoride	0.12	mg/l	16984-48-8
U-4D	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	03/21/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	03/21/2017	Lead	< 10.0	ug/l	7439-92-1
U-4D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	06/26/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	06/26/2017	Lead	< 10.0	ug/l	7439-92-1
U-4D	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
U-4D	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	03/21/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	06/26/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4D	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	03/21/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	06/26/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4D	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	03/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	06/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4D	02/22/2017	pH	7.5	pH UNITS	PH
U-4D	03/21/2017	pH	7.6	pH UNITS	PH
U-4D	03/21/2017	pH	7.7	pH UNITS	PH
U-4D	04/24/2017	pH	7.9	pH UNITS	PH
U-4D	05/15/2017	pH	7.3	pH UNITS	PH
U-4D	06/26/2017	pH	7.7	pH UNITS	PH
U-4D	06/26/2017	pH	7.8	pH UNITS	PH
U-4D	07/25/2017	pH	7.7	pH UNITS	PH
U-4D	08/14/2017	pH	7.7	pH UNITS	PH



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4D	09/05/2017	pH	7.8	pH UNITS	PH
U-4D	02/22/2017	Radium (226)	< 40.3	pci/l	13982-63-3
U-4D	03/21/2017	Radium (226)	22.6	pci/l	13982-63-3
U-4D	04/24/2017	Radium (226)	< 32.9	pci/l	13982-63-3
U-4D	05/15/2017	Radium (226)	< 0.102	pci/l	13982-63-3
U-4D	06/26/2017	Radium (226)	< 0.0731	pci/l	13982-63-3
U-4D	07/25/2017	Radium (226)	< 0.0811	pci/l	13982-63-3
U-4D	08/14/2017	Radium (226)	0.0887	pci/l	13982-63-3
U-4D	09/05/2017	Radium (226)	< 0.0616	pci/l	13982-63-3
U-4D	02/22/2017	Radium 228	< 38.4	pci/l	15262-20-1
U-4D	03/21/2017	Radium 228	< 31.0	pci/l	15262-20-1
U-4D	04/24/2017	Radium 228	< 28.5	pci/l	15262-20-1
U-4D	05/15/2017	Radium 228	< 0.326	pci/l	15262-20-1
U-4D	06/26/2017	Radium 228	< 0.330	pci/l	15262-20-1
U-4D	07/25/2017	Radium 228	< 0.469	pci/l	15262-20-1
U-4D	08/14/2017	Radium 228	0.662	pci/l	15262-20-1
U-4D	09/05/2017	Radium 228	0.661	pci/l	15262-20-1
U-4D	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	03/21/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	05/15/2017	Selenium	1.0	ug/l	7782-49-2
U-4D	06/26/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4D	02/22/2017	Sulfate as SO4	28.1	mg/l	14808-79-8
U-4D	03/21/2017	Sulfate as SO4	31.4	mg/l	14808-79-8
U-4D	03/21/2017	Sulfate as SO4	32.4	mg/l	14808-79-8
U-4D	04/24/2017	Sulfate as SO4	30.2	mg/l	14808-79-8
U-4D	05/15/2017	Sulfate as SO4	29.2	mg/l	14808-79-8
U-4D	06/26/2017	Sulfate as SO4	29.8	mg/l	14808-79-8
U-4D	07/25/2017	Sulfate as SO4	28.5	mg/l	14808-79-8
U-4D	08/14/2017	Sulfate as SO4	29.0	mg/l	14808-79-8
U-4D	09/05/2017	Sulfate as SO4	27.4	mg/l	14808-79-8
U-4D	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	03/21/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	06/26/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4D	02/22/2017	Total Dissolved Solids	415	mg/l	TDS
U-4D	03/21/2017	Total Dissolved Solids	429	mg/l	TDS
U-4D	03/21/2017	Total Dissolved Solids	540	mg/l	TDS
U-4D	04/24/2017	Total Dissolved Solids	387	mg/l	TDS
U-4D	05/15/2017	Total Dissolved Solids	403	mg/l	TDS
U-4D	06/26/2017	Total Dissolved Solids	414	mg/l	TDS
U-4D	07/25/2017	Total Dissolved Solids	399	mg/l	TDS

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4D	08/14/2017	Total Dissolved Solids	448	mg/l	TDS
U-4D	09/05/2017	Total Dissolved Solids	418	mg/l	TDS
U-4S	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	03/21/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	06/26/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
U-4S	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	03/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	06/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-4S	02/22/2017	Barium	0.039	mg/l	7440-39-3
U-4S	03/21/2017	Barium	0.039	mg/l	7440-39-3
U-4S	04/24/2017	Barium	0.042	mg/l	7440-39-3
U-4S	05/15/2017	Barium	0.042	mg/l	7440-39-3
U-4S	06/26/2017	Barium	0.043	mg/l	7440-39-3
U-4S	07/25/2017	Barium	0.044	mg/l	7440-39-3
U-4S	08/14/2017	Barium	0.045	mg/l	7440-39-3
U-4S	09/05/2017	Barium	0.043	mg/l	7440-39-3
U-4S	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	03/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	06/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-4S	02/22/2017	Boron	< 0.020	mg/l	7440-42-8
U-4S	03/21/2017	Boron	< 0.020	mg/l	7440-42-8
U-4S	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
U-4S	05/15/2017	Boron	0.020	mg/l	7440-42-8
U-4S	06/26/2017	Boron	0.021	mg/l	7440-42-8
U-4S	07/25/2017	Boron	< 0.020	mg/l	7440-42-8
U-4S	08/14/2017	Boron	0.022	mg/l	7440-42-8
U-4S	09/05/2017	Boron	0.023	mg/l	7440-42-8
U-4S	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	03/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	06/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4S	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-4S	02/22/2017	Calcium	90.3	mg/l	7440-70-2
U-4S	03/21/2017	Calcium	101	mg/l	7440-70-2
U-4S	03/21/2017	Calcium	88.7	mg/l	7440-70-2
U-4S	04/24/2017	Calcium	96.4	mg/l	7440-70-2
U-4S	05/15/2017	Calcium	102	mg/l	7440-70-2
U-4S	06/26/2017	Calcium	103	mg/l	7440-70-2
U-4S	06/26/2017	Calcium	97.4	mg/l	7440-70-2
U-4S	07/25/2017	Calcium	101	mg/l	7440-70-2
U-4S	08/14/2017	Calcium	104	mg/l	7440-70-2
U-4S	09/05/2017	Calcium	99.8	mg/l	7440-70-2
U-4S	02/22/2017	Chloride	35.0	mg/l	16887-00-6
U-4S	03/21/2017	Chloride	40.0	mg/l	16887-00-6
U-4S	03/21/2017	Chloride	44.5	mg/l	16887-00-6
U-4S	04/24/2017	Chloride	44.7	mg/l	16887-00-6
U-4S	05/15/2017	Chloride	47.9	mg/l	16887-00-6
U-4S	06/26/2017	Chloride	48.5	mg/l	16887-00-6
U-4S	06/26/2017	Chloride	49.3	mg/l	16887-00-6
U-4S	07/25/2017	Chloride	47.0	mg/l	16887-00-6
U-4S	08/14/2017	Chloride	55.6	mg/l	16887-00-6
U-4S	09/05/2017	Chloride	57.7	mg/l	16887-00-6
U-4S	02/22/2017	Chromium	0.021	mg/l	7440-47-3
U-4S	03/21/2017	Chromium	0.016	mg/l	7440-47-3
U-4S	04/24/2017	Chromium	0.024	mg/l	7440-47-3
U-4S	05/15/2017	Chromium	0.032	mg/l	7440-47-3
U-4S	06/26/2017	Chromium	0.049	mg/l	7440-47-3
U-4S	07/25/2017	Chromium	0.028	mg/l	7440-47-3
U-4S	08/14/2017	Chromium	0.011	mg/l	7440-47-3
U-4S	09/05/2017	Chromium	0.017	mg/l	7440-47-3
U-4S	02/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4S	03/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4S	04/24/2017	Cobalt	0.34	ug/l	7440-48-4
U-4S	05/15/2017	Cobalt	0.37	ug/l	7440-48-4
U-4S	06/26/2017	Cobalt	0.34	ug/l	7440-48-4
U-4S	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4S	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4S	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-4S	02/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4S	03/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4S	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4S	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4S	06/26/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-4S	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4S	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4S	09/05/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-4S	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	03/21/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	03/21/2017	Lead	< 10.0	ug/l	7439-92-1
U-4S	04/24/2017	Lead	< 0.010	mg/l	7439-92-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4S	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	06/26/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	06/26/2017	Lead	< 10.0	ug/l	7439-92-1
U-4S	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
U-4S	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	03/21/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	06/26/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
U-4S	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	03/21/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	06/26/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
U-4S	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	03/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	06/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-4S	02/22/2017	pH	7.5	pH UNITS	PH
U-4S	03/21/2017	pH	7.5	pH UNITS	PH
U-4S	03/21/2017	pH	7.8	pH UNITS	PH
U-4S	04/24/2017	pH	7.8	pH UNITS	PH
U-4S	05/15/2017	pH	7.2	pH UNITS	PH
U-4S	06/26/2017	pH	7.7	pH UNITS	PH
U-4S	07/25/2017	pH	7.6	pH UNITS	PH
U-4S	08/14/2017	pH	7.6	pH UNITS	PH
U-4S	09/05/2017	pH	7.7	pH UNITS	PH
U-4S	02/22/2017	Radium (226)	< 16.9	pci/l	13982-63-3
U-4S	03/21/2017	Radium (226)	< 18.7	pci/l	13982-63-3
U-4S	04/24/2017	Radium (226)	27.3	pci/l	13982-63-3
U-4S	05/15/2017	Radium (226)	0.128	pci/l	13982-63-3
U-4S	06/26/2017	Radium (226)	0.112	pci/l	13982-63-3
U-4S	07/25/2017	Radium (226)	< 0.0818	pci/l	13982-63-3
U-4S	08/14/2017	Radium (226)	0.158	pci/l	13982-63-3
U-4S	09/05/2017	Radium (226)	0.0762	pci/l	13982-63-3
U-4S	02/22/2017	Radium 228	< 31.1	pci/l	15262-20-1
U-4S	03/21/2017	Radium 228	< 34.4	pci/l	15262-20-1

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-4S	04/24/2017	Radium 228	< 26.2	pci/l	15262-20-1
U-4S	05/15/2017	Radium 228	< 0.376	pci/l	15262-20-1
U-4S	06/26/2017	Radium 228	0.383	pci/l	15262-20-1
U-4S	07/25/2017	Radium 228	< 0.401	pci/l	15262-20-1
U-4S	08/14/2017	Radium 228	< 0.407	pci/l	15262-20-1
U-4S	09/05/2017	Radium 228	0.681	pci/l	15262-20-1
U-4S	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	03/21/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	05/15/2017	Selenium	1.1	ug/l	7782-49-2
U-4S	06/26/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
U-4S	02/22/2017	Sulfate as SO4	33.4	mg/l	14808-79-8
U-4S	03/21/2017	Sulfate as SO4	33.5	mg/l	14808-79-8
U-4S	03/21/2017	Sulfate as SO4	35.9	mg/l	14808-79-8
U-4S	04/24/2017	Sulfate as SO4	33.4	mg/l	14808-79-8
U-4S	05/15/2017	Sulfate as SO4	30.8	mg/l	14808-79-8
U-4S	06/26/2017	Sulfate as SO4	28.9	mg/l	14808-79-8
U-4S	06/26/2017	Sulfate as SO4	29.3	mg/l	14808-79-8
U-4S	07/25/2017	Sulfate as SO4	27.4	mg/l	14808-79-8
U-4S	08/14/2017	Sulfate as SO4	24.3	mg/l	14808-79-8
U-4S	09/05/2017	Sulfate as SO4	23.4	mg/l	14808-79-8
U-4S	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	03/21/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	06/26/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
U-4S	02/22/2017	Total Dissolved Solids	404	mg/l	TDS
U-4S	03/21/2017	Total Dissolved Solids	407	mg/l	TDS
U-4S	03/21/2017	Total Dissolved Solids	409	mg/l	TDS
U-4S	04/24/2017	Total Dissolved Solids	393	mg/l	TDS
U-4S	05/15/2017	Total Dissolved Solids	430	mg/l	TDS
U-4S	06/26/2017	Total Dissolved Solids	447	mg/l	TDS
U-4S	07/25/2017	Total Dissolved Solids	429	mg/l	TDS
U-4S	08/14/2017	Total Dissolved Solids	491	mg/l	TDS
U-4S	09/05/2017	Total Dissolved Solids	464	mg/l	TDS
U-5D	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	03/21/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	06/26/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5D	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5D	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	03/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	06/26/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5D	02/22/2017	Barium	0.053	mg/l	7440-39-3
U-5D	03/21/2017	Barium	0.055	mg/l	7440-39-3
U-5D	04/24/2017	Barium	0.057	mg/l	7440-39-3
U-5D	05/15/2017	Barium	0.056	mg/l	7440-39-3
U-5D	06/26/2017	Barium	0.055	mg/l	7440-39-3
U-5D	07/25/2017	Barium	0.057	mg/l	7440-39-3
U-5D	08/14/2017	Barium	0.057	mg/l	7440-39-3
U-5D	09/05/2017	Barium	0.053	mg/l	7440-39-3
U-5D	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	03/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	06/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5D	02/22/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	03/21/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	04/24/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	05/15/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	06/26/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	07/25/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	08/14/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	09/05/2017	Boron	< 0.020	mg/l	7440-42-8
U-5D	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	03/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	06/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5D	02/22/2017	Calcium	100	mg/l	7440-70-2
U-5D	03/21/2017	Calcium	86.5	mg/l	7440-70-2
U-5D	03/21/2017	Calcium	91.2	mg/l	7440-70-2
U-5D	04/24/2017	Calcium	89.6	mg/l	7440-70-2
U-5D	05/15/2017	Calcium	87.9	mg/l	7440-70-2
U-5D	06/26/2017	Calcium	86.0	mg/l	7440-70-2
U-5D	06/26/2017	Calcium	89.8	mg/l	7440-70-2
U-5D	07/25/2017	Calcium	87.9	mg/l	7440-70-2
U-5D	08/14/2017	Calcium	85.1	mg/l	7440-70-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5D	09/05/2017	Calcium	81.6	mg/l	7440-70-2
U-5D	02/22/2017	Chloride	22.6	mg/l	16887-00-6
U-5D	03/21/2017	Chloride	29.2	mg/l	16887-00-6
U-5D	03/21/2017	Chloride	30.3	mg/l	16887-00-6
U-5D	04/24/2017	Chloride	30.5	mg/l	16887-00-6
U-5D	05/15/2017	Chloride	30.4	mg/l	16887-00-6
U-5D	06/26/2017	Chloride	29.5	mg/l	16887-00-6
U-5D	06/26/2017	Chloride	29.7	mg/l	16887-00-6
U-5D	07/25/2017	Chloride	27.3	mg/l	16887-00-6
U-5D	08/14/2017	Chloride	27.4	mg/l	16887-00-6
U-5D	09/05/2017	Chloride	27.7	mg/l	16887-00-6
U-5D	02/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	03/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	06/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5D	02/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	03/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	06/26/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5D	02/22/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-5D	03/21/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-5D	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5D	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5D	06/26/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5D	07/25/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-5D	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-5D	09/05/2017	Fluoride	0.10	mg/l	16984-48-8
U-5D	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	03/21/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	03/21/2017	Lead	< 10.0	ug/l	7439-92-1
U-5D	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	06/26/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	06/26/2017	Lead	< 10.0	ug/l	7439-92-1
U-5D	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
U-5D	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	03/21/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5D	06/26/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5D	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	03/21/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	06/26/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5D	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	03/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	06/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5D	02/22/2017	pH	7.5	pH UNITS	PH
U-5D	03/21/2017	pH	7.6	pH UNITS	PH
U-5D	03/21/2017	pH	7.8	pH UNITS	PH
U-5D	04/24/2017	pH	7.9	pH UNITS	PH
U-5D	05/15/2017	pH	7.4	pH UNITS	PH
U-5D	06/26/2017	pH	7.7	pH UNITS	PH
U-5D	06/26/2017	pH	7.8	pH UNITS	PH
U-5D	07/25/2017	pH	7.7	pH UNITS	PH
U-5D	08/14/2017	pH	7.6	pH UNITS	PH
U-5D	09/05/2017	pH	7.7	pH UNITS	PH
U-5D	02/22/2017	Radium (226)	36.7	pci/l	13982-63-3
U-5D	03/21/2017	Radium (226)	< 38.5	pci/l	13982-63-3
U-5D	04/24/2017	Radium (226)	42.4	pci/l	13982-63-3
U-5D	05/15/2017	Radium (226)	< 0.116	pci/l	13982-63-3
U-5D	06/26/2017	Radium (226)	< 0.0740	pci/l	13982-63-3
U-5D	07/25/2017	Radium (226)	< 0.0703	pci/l	13982-63-3
U-5D	08/14/2017	Radium (226)	0.0879	pci/l	13982-63-3
U-5D	09/05/2017	Radium (226)	< 0.0624	pci/l	13982-63-3
U-5D	02/22/2017	Radium 228	< 27.1	pci/l	15262-20-1
U-5D	03/21/2017	Radium 228	< 31.0	pci/l	15262-20-1
U-5D	04/24/2017	Radium 228	< 30.4	pci/l	15262-20-1
U-5D	05/15/2017	Radium 228	< 0.381	pci/l	15262-20-1
U-5D	06/26/2017	Radium 228	< 0.394	pci/l	15262-20-1
U-5D	07/25/2017	Radium 228	< 0.449	pci/l	15262-20-1
U-5D	08/14/2017	Radium 228	< 0.393	pci/l	15262-20-1
U-5D	09/05/2017	Radium 228	1.30	pci/l	15262-20-1
U-5D	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	03/21/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5D	05/15/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	06/26/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5D	02/22/2017	Sulfate as SO4	30.1	mg/l	14808-79-8
U-5D	03/21/2017	Sulfate as SO4	31.3	mg/l	14808-79-8
U-5D	03/21/2017	Sulfate as SO4	32.6	mg/l	14808-79-8
U-5D	04/24/2017	Sulfate as SO4	31.5	mg/l	14808-79-8
U-5D	05/15/2017	Sulfate as SO4	30.5	mg/l	14808-79-8
U-5D	06/26/2017	Sulfate as SO4	30.7	mg/l	14808-79-8
U-5D	06/26/2017	Sulfate as SO4	31.3	mg/l	14808-79-8
U-5D	07/25/2017	Sulfate as SO4	29.3	mg/l	14808-79-8
U-5D	08/14/2017	Sulfate as SO4	30.3	mg/l	14808-79-8
U-5D	09/05/2017	Sulfate as SO4	28.6	mg/l	14808-79-8
U-5D	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	03/21/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	06/26/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5D	02/22/2017	Total Dissolved Solids	414	mg/l	TDS
U-5D	03/21/2017	Total Dissolved Solids	372	mg/l	TDS
U-5D	03/21/2017	Total Dissolved Solids	394	mg/l	TDS
U-5D	04/24/2017	Total Dissolved Solids	384	mg/l	TDS
U-5D	05/15/2017	Total Dissolved Solids	391	mg/l	TDS
U-5D	06/26/2017	Total Dissolved Solids	412	mg/l	TDS
U-5D	07/25/2017	Total Dissolved Solids	399	mg/l	TDS
U-5D	08/14/2017	Total Dissolved Solids	427	mg/l	TDS
U-5D	09/05/2017	Total Dissolved Solids	396	mg/l	TDS
U-5S	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	02/22/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	03/21/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	04/24/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	05/15/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	06/26/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	07/25/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	08/14/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	09/05/2017	Antimony	< 1.0	ug/l	7440-36-0
U-5S	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	02/22/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	03/21/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	04/24/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	05/15/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	06/26/2017	Arsenic	1.4	ug/l	7440-38-2
U-5S	06/26/2017	Arsenic	1.5	ug/l	7440-38-2
U-5S	06/26/2017	Arsenic	1.6	ug/l	7440-38-2

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5S	07/25/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	08/14/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	09/05/2017	Arsenic	< 1.0	ug/l	7440-38-2
U-5S	02/22/2017	Barium	0.063	mg/l	7440-39-3
U-5S	02/22/2017	Barium	0.062	mg/l	7440-39-3
U-5S	03/21/2017	Barium	0.060	mg/l	7440-39-3
U-5S	04/24/2017	Barium	0.063	mg/l	7440-39-3
U-5S	04/24/2017	Barium	0.064	mg/l	7440-39-3
U-5S	05/15/2017	Barium	0.063	mg/l	7440-39-3
U-5S	06/26/2017	Barium	0.085	mg/l	7440-39-3
U-5S	07/25/2017	Barium	0.068	mg/l	7440-39-3
U-5S	08/14/2017	Barium	0.065	mg/l	7440-39-3
U-5S	08/14/2017	Barium	0.067	mg/l	7440-39-3
U-5S	09/05/2017	Barium	0.061	mg/l	7440-39-3
U-5S	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	02/22/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	03/21/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	04/24/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	05/15/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	06/26/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	07/25/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	08/14/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	09/05/2017	Beryllium	< 0.70	ug/l	7440-41-7
U-5S	02/22/2017	Boron	0.022	mg/l	7440-42-8
U-5S	02/22/2017	Boron	0.022	mg/l	7440-42-8
U-5S	03/21/2017	Boron	< 0.020	mg/l	7440-42-8
U-5S	03/21/2017	Boron	0.021	mg/l	7440-42-8
U-5S	04/24/2017	Boron	0.020	mg/l	7440-42-8
U-5S	04/24/2017	Boron	0.021	mg/l	7440-42-8
U-5S	05/15/2017	Boron	0.021	mg/l	7440-42-8
U-5S	06/26/2017	Boron	0.021	mg/l	7440-42-8
U-5S	07/25/2017	Boron	0.020	mg/l	7440-42-8
U-5S	08/14/2017	Boron	0.022	mg/l	7440-42-8
U-5S	09/05/2017	Boron	0.022	mg/l	7440-42-8
U-5S	09/05/2017	Boron	0.024	mg/l	7440-42-8
U-5S	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	02/22/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	03/21/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	04/24/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	05/15/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	06/26/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	07/25/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	08/14/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	09/05/2017	Cadmium	< 0.50	ug/l	7440-43-9
U-5S	02/22/2017	Calcium	92.7	mg/l	7440-70-2
U-5S	02/22/2017	Calcium	90.6	mg/l	7440-70-2
U-5S	03/21/2017	Calcium	88.4	mg/l	7440-70-2
U-5S	03/21/2017	Calcium	91.3	mg/l	7440-70-2
U-5S	03/21/2017	Calcium	96.7	mg/l	7440-70-2



Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5S	04/24/2017	Calcium	91.7	mg/l	7440-70-2
U-5S	04/24/2017	Calcium	93.4	mg/l	7440-70-2
U-5S	05/15/2017	Calcium	93.4	mg/l	7440-70-2
U-5S	06/26/2017	Calcium	120	mg/l	7440-70-2
U-5S	06/26/2017	Calcium	124	mg/l	7440-70-2
U-5S	06/26/2017	Calcium	128	mg/l	7440-70-2
U-5S	07/25/2017	Calcium	94.6	mg/l	7440-70-2
U-5S	08/14/2017	Calcium	89.9	mg/l	7440-70-2
U-5S	08/14/2017	Calcium	93.1	mg/l	7440-70-2
U-5S	09/05/2017	Calcium	88.2	mg/l	7440-70-2
U-5S	09/05/2017	Calcium	88.4	mg/l	7440-70-2
U-5S	02/22/2017	Chloride	41.6	mg/l	16887-00-6
U-5S	02/22/2017	Chloride	42.1	mg/l	16887-00-6
U-5S	03/21/2017	Chloride	40.6	mg/l	16887-00-6
U-5S	03/21/2017	Chloride	41.6	mg/l	16887-00-6
U-5S	04/24/2017	Chloride	46.1	mg/l	16887-00-6
U-5S	04/24/2017	Chloride	46.4	mg/l	16887-00-6
U-5S	05/15/2017	Chloride	45.3	mg/l	16887-00-6
U-5S	06/26/2017	Chloride	148	mg/l	16887-00-6
U-5S	06/26/2017	Chloride	150	mg/l	16887-00-6
U-5S	07/25/2017	Chloride	71.4	mg/l	16887-00-6
U-5S	08/14/2017	Chloride	45.3	mg/l	16887-00-6
U-5S	08/14/2017	Chloride	45.8	mg/l	16887-00-6
U-5S	09/05/2017	Chloride	43.2	mg/l	16887-00-6
U-5S	09/05/2017	Chloride	43.7	mg/l	16887-00-6
U-5S	02/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	02/22/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	03/21/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	04/24/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	05/15/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	06/26/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	07/25/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	08/14/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	09/05/2017	Chromium	< 0.0040	mg/l	7440-47-3
U-5S	02/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	02/22/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	03/21/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	04/24/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	05/15/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	06/26/2017	Cobalt	0.30	ug/l	7440-48-4
U-5S	07/25/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	08/14/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	09/05/2017	Cobalt	< 0.30	ug/l	7440-48-4
U-5S	02/22/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5S	02/22/2017	Fluoride	0.13	mg/l	16984-48-8
U-5S	03/21/2017	Fluoride	0.11	mg/l	16984-48-8
U-5S	04/24/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5S	05/15/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5S	06/26/2017	Fluoride	< 0.25	mg/l	16984-48-8

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Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5S	07/25/2017	Fluoride	< 0.25	mg/l	16984-48-8
U-5S	08/14/2017	Fluoride	< 0.10	mg/l	16984-48-8
U-5S	09/05/2017	Fluoride	0.12	mg/l	16984-48-8
U-5S	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	02/22/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	03/21/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	03/21/2017	Lead	< 10.0	ug/l	7439-92-1
U-5S	04/24/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	05/15/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	06/26/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	06/26/2017	Lead	< 10.0	ug/l	7439-92-1
U-5S	07/25/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	08/14/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	09/05/2017	Lead	< 0.010	mg/l	7439-92-1
U-5S	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	02/22/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	03/21/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	04/24/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	05/15/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	06/26/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	07/25/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	08/14/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	09/05/2017	Lithium	< 0.030	mg/l	7439-93-2
U-5S	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	02/22/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	03/21/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	04/24/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	05/15/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	06/26/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	07/25/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	08/14/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	09/05/2017	Mercury	< 0.20	ug/l	7439-97-6
U-5S	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	02/22/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	03/21/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	04/24/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	05/15/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	06/26/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	07/25/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	08/14/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	09/05/2017	MOLYBDENUM	< 1.0	ug/l	7439-98-7
U-5S	02/22/2017	pH	7.4	pH UNITS	PH
U-5S	02/22/2017	pH	7.5	pH UNITS	PH
U-5S	03/21/2017	pH	7.5	pH UNITS	PH
U-5S	03/21/2017	pH	7.7	pH UNITS	PH
U-5S	04/24/2017	pH	7.9	pH UNITS	PH
U-5S	05/15/2017	pH	7.3	pH UNITS	PH
U-5S	06/26/2017	pH	7.6	pH UNITS	PH
U-5S	06/26/2017	pH	7.7	pH UNITS	PH

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Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5S	07/25/2017	pH	7.7	pH UNITS	PH
U-5S	08/14/2017	pH	7.6	pH UNITS	PH
U-5S	09/05/2017	pH	7.6	pH UNITS	PH
U-5S	09/05/2017	pH	7.7	pH UNITS	PH
U-5S	02/22/2017	Radium (226)	34.0	pci/l	13982-63-3
U-5S	02/22/2017	Radium (226)	< 43.6	pci/l	13982-63-3
U-5S	03/21/2017	Radium (226)	< 19.0	pci/l	13982-63-3
U-5S	03/21/2017	Radium (226)	37.0	pci/l	13982-63-3
U-5S	04/24/2017	Radium (226)	< 31.5	pci/l	13982-63-3
U-5S	04/24/2017	Radium (226)	46.5	pci/l	13982-63-3
U-5S	05/15/2017	Radium (226)	< 0.0945	pci/l	13982-63-3
U-5S	06/26/2017	Radium (226)	0.142	pci/l	13982-63-3
U-5S	07/25/2017	Radium (226)	0.190	pci/l	13982-63-3
U-5S	08/14/2017	Radium (226)	0.0940	pci/l	13982-63-3
U-5S	08/14/2017	Radium (226)	0.148	pci/l	13982-63-3
U-5S	09/05/2017	Radium (226)	0.125	pci/l	13982-63-3
U-5S	09/05/2017	Radium (226)	0.144	pci/l	13982-63-3
U-5S	02/22/2017	Radium 228	22.9	pci/l	15262-20-1
U-5S	02/22/2017	Radium 228	< 41.8	pci/l	15262-20-1
U-5S	03/21/2017	Radium 228	< 21.2	pci/l	15262-20-1
U-5S	03/21/2017	Radium 228	< 38.7	pci/l	15262-20-1
U-5S	04/24/2017	Radium 228	< 29.6	pci/l	15262-20-1
U-5S	04/24/2017	Radium 228	< 38.4	pci/l	15262-20-1
U-5S	05/15/2017	Radium 228	0.342	pci/l	15262-20-1
U-5S	06/26/2017	Radium 228	0.421	pci/l	15262-20-1
U-5S	07/25/2017	Radium 228	0.468	pci/l	15262-20-1
U-5S	08/14/2017	Radium 228	< 0.323	pci/l	15262-20-1
U-5S	08/14/2017	Radium 228	0.426	pci/l	15262-20-1
U-5S	09/05/2017	Radium 228	0.481	pci/l	15262-20-1
U-5S	09/05/2017	Radium 228	0.979	pci/l	15262-20-1
U-5S	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	02/22/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	03/21/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	04/24/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	05/15/2017	Selenium	1.0	ug/l	7782-49-2
U-5S	06/26/2017	Selenium	2.1	ug/l	7782-49-2
U-5S	07/25/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	08/14/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	09/05/2017	Selenium	< 1.0	ug/l	7782-49-2
U-5S	02/22/2017	Sulfate as SO4	23.5	mg/l	14808-79-8
U-5S	02/22/2017	Sulfate as SO4	24.3	mg/l	14808-79-8
U-5S	03/21/2017	Sulfate as SO4	25.9	mg/l	14808-79-8
U-5S	03/21/2017	Sulfate as SO4	26.7	mg/l	14808-79-8
U-5S	04/24/2017	Sulfate as SO4	25.1	mg/l	14808-79-8
U-5S	04/24/2017	Sulfate as SO4	26.6	mg/l	14808-79-8
U-5S	05/15/2017	Sulfate as SO4	26.1	mg/l	14808-79-8
U-5S	06/26/2017	Sulfate as SO4	27.3	mg/l	14808-79-8
U-5S	06/26/2017	Sulfate as SO4	27.4	mg/l	14808-79-8
U-5S	07/25/2017	Sulfate as SO4	25.2	mg/l	14808-79-8

Table 3



Groundwater Analytical Data

Location	Date	Parameter	Result	Units	CAS #
U-5S	08/14/2017	Sulfate as SO4	26.2	mg/l	14808-79-8
U-5S	08/14/2017	Sulfate as SO4	26.3	mg/l	14808-79-8
U-5S	09/05/2017	Sulfate as SO4	25.2	mg/l	14808-79-8
U-5S	09/05/2017	Sulfate as SO4	25.3	mg/l	14808-79-8
U-5S	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	02/22/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	03/21/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	04/24/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	05/15/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	06/26/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	07/25/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	08/14/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	09/05/2017	Thallium	< 0.20	ug/l	7440-28-0
U-5S	02/22/2017	Total Dissolved Solids	423	mg/l	TDS
U-5S	03/21/2017	Total Dissolved Solids	393	mg/l	TDS
U-5S	03/21/2017	Total Dissolved Solids	440	mg/l	TDS
U-5S	03/21/2017	Total Dissolved Solids	448	mg/l	TDS
U-5S	04/24/2017	Total Dissolved Solids	402	mg/l	TDS
U-5S	04/24/2017	Total Dissolved Solids	412	mg/l	TDS
U-5S	05/15/2017	Total Dissolved Solids	416	mg/l	TDS
U-5S	06/26/2017	Total Dissolved Solids	690	mg/l	TDS
U-5S	06/26/2017	Total Dissolved Solids	696	mg/l	TDS
U-5S	07/25/2017	Total Dissolved Solids	480	mg/l	TDS
U-5S	08/14/2017	Total Dissolved Solids	466	mg/l	TDS
U-5S	08/14/2017	Total Dissolved Solids	490	mg/l	TDS
U-5S	09/05/2017	Total Dissolved Solids	430	mg/l	TDS
U-5S	09/05/2017	Total Dissolved Solids	448	mg/l	TDS

**Table 4**  
**Background Threshold Values**



**Appendix III to Part 257**

Parameter	Background Threshold Value (BTV)	Units	CAS #
Boron	0.079	mg/l	7440-42-8
Calcium	122	mg/l	7440-70-2
Chloride	78.4	mg/l	16887-00-6
Fluoride	0.250	mg/l	15984-48-8
pH	8.1	pH UNITS	PH
Sulfate as SO <sub>4</sub>	530	mg/l	14808-79-8
Total Dissolved Solids	614	mg/l	TDS

**Appendix IV to Part 257**

Parameter	Background Threshold Value (BTV)	Units	CAS #
Antimony	1.0	ug/l	7440-36-0
Arsenic	1.0	ug/l	7440-38-2
Barium	0.076	mg/l	7440-39-3
Beryllium	0.7	ug/l	7440-41-7
Cadmium	0.5	ug/l	7440-43-9
Chromium	0.0068	mg/l	7440-47-3
Cobalt	1.2	ug/l	7440-48-4
Lead	0.010	mg/l	7439-92-1
Lithium	0.030	mg/l	7439-93-2
Mercury	0.2	mg/l	7439-97-6
Molybdenum	1.0	ug/l	7439-98-7
Radium 226	97.1	pci/l	13982-63-3
Radium 228	60.6	pci/l	15262-20-1
Selenium	1.9	ug/l	7782-49-2
Thallium	0.2	ug/l	7440-28-0





## Appendix A – Field Data Sheets

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## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
 Project Number: 35077  
 Sampling Device: Dedicated Bladder Pump  
 Date: 2/22/17  
 Well ID: V-43

Tubing Diameter (ID): 2 inches  
 Depth to Water: 15.71' ft, TOC  
 Depth to Bottom of Well: 34.36 ft, TOC  
 Feet of Water in Well: 18.65 ft  
 Volume of Water in Well: 3.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	15.75'	9.03	792	10.14	1000
5	15.75'	9.80	769	9.86	1000
10	15.75'	9.72	769	9.82	1000
15	15.75'	9.77	769	9.83	1000

Purge Start Time: 11:15 Purge End Time: 11:30 Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1000 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 46°F mostly cloudy, 0-5 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 1/22/17  
 Well ID: V-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 22.35 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 66.85 ft  
 Volume of Water in Well: 10.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (includes 1 cm)	Temperature (°F)°C	Purge Rate (L/min)
1	22.45'	8.89	690	10.84	1000
10	22.45'	8.86	799	9.66	1000
20	22.45'	8.83	801	9.56	1000
30	22.45'	8.81	802	9.53	1000
40	22.45'	8.79	803	9.54	1000

Purge Start Time: 11:40      Purge End Time: 12:20      Total Volume Purged: 11.0 gal  
 Approximate Purge Rate: 1000 ml/min      Purged/Sampled by: M. Schatz  
 Weather Conditions: 46°F, mostly clear, 2-5 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont Tubing Diameter (ID): 2 inches  
Project Number: 3501770 Depth to Water: 29.77' ft, TOC  
Sampling Device: Dedicated Bladder Pump Depth to Bottom of Well: 42.5' ft, TOC  
Date: 2/22/17 Feet of Water in Well: 12.73 ft  
Well ID: V-53 Volume of Water in Well: 2.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate mL/min
1	29.85	8.83	732	11.26	1000
2	29.85	8.69	809	11.09	1000
4	27.95	8.68	805	11.10	1000
6	24.85	8.65	807	11.12	1000
8	24.95	8.66	803	11.12	1000

Purge Start Time: 12:45 Purge End Time: 12:55 Total Volume Purged: 3.0 gal  
Approximate Purge Rate: 1000 mL/min Purged/Sampled by: N. Sehl/196  
Weather Conditions: 50°F, mostly cloudy, 0-5 mph S  
Comments: Collect DUP-2



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SKB Rosemount  
 Project Number: 35D1770  
 Sampling Device: Dedicated Rubber Pump  
 Date: 2/22/17  
 Well ID: V-5V

Tubing Diameter (ID): 2 inches  
 Depth to Water: 31.47' ft, TOC  
 Depth to Bottom of Well: 101.54 ft, TOC  
 Feet of Water in Well: 70.07 ft  
 Volume of Water in Well: 11.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos / cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Purge Rate (L/min)
1	31.65	8.81	772	10.63	1000
10	31.65	8.88	772	10.62	1000
20	31.65	8.84	772	10.61	1000
30	31.65	8.91	772	10.57	1000
40	31.65	8.90	772	10.54	1000

Purge Start Time: 13:10 Purge End Time: 13:50 Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1000 mL/min Purged/Sampled by: M. Schlagel  
 Weather Conditions: 50°F, mostly cloudy, 0-5 mph S  
 Comments: \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rossmore  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 2/21/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 123.74 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 12.23 ft  
 Volume of Water in Well: 2.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	123.75	8.91	824	10.51	1000
3	123.75	8.82	823	11.05	1000
6	123.75	8.66	824	11.16	1000
9	123.75	8.68	822	11.19	1000

Purge Start Time: 11:00 Purge End Time: 11:10 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1000 L/min Purged/Sampled by: M. Scheyer  
 Weather Conditions: 36°F, mostly cloudy, 5-10 mph S  
 Comments: \_\_\_\_\_







# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
Project Number: 3501-770  
Sampling Device: Dedicated Bladder Pump  
Date: 2-24-17  
Well ID: D-2 D

Tubing Diameter (ID): 2' inches  
Depth to Water: 117.66 ft, TOC  
Depth to Bottom of Well: 163.98 ft, TOC  
Feet of Water in Well: 46.32 ft  
Volume of Water in Well: 7.6 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Microhm/cm)	Temperature (°F)	Purge Rate (L/min)
1	117.60	8.72	732	10.91	1000
10	117.80	8.89	769	10.32	1000
20	117.80	8.92	773	10.28	1000
30	117.80	8.91	774	10.26	1000

Purge Start Time: 13:10 Purge End Time: 13:40 Total Volume Purged: 8.0 gal  
Approximate Purge Rate: 1000 L/min Purged/Sampled by: N. Seibert  
Weather Conditions: 46°F, mostly sunny, 10-15 mph S  
Comments: Lock rusted open



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 2/26/17  
 Well ID: D-35

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.14 ft, TOC  
 Depth to Bottom of Well: 135.13 ft, TOC  
 Feet of Water in Well: 23.99 ft  
 Volume of Water in Well: 3.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (micro S/cm)	Temperature (°F)	Purge Rate (L/min)
1	111.25	9.88	825	10.10	1000
5	111.25	9.93	844	10.10	1000
10	111.25	9.58	853	10.05	1000
15	111.25	9.61	854	10.07	1000

Purge Start Time: 9:15 Purge End Time: 9:30 Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1000 L/min. Purged/Sampled by: N. Schlegel  
 Weather Conditions: 34°F, Foggy, 5-10 S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501720  
 Sampling Device: Dedicated Hopper Pump  
 Date: 2-12-17  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.90 ft, TOC  
 Depth to Bottom of Well: 155.5 ft, TOC  
 Feet of Water in Well: 43.6 ft  
 Volume of Water in Well: 7.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	112.10	8.60	745	9.47	1000
5	112.10	8.76	819	9.97	1000
10	112.10	8.66	817	9.97	1000
15	112.10	8.63	819	9.92	1000
20	112.10	8.64	820	9.91	1000
25	112.10	8.60	817	9.92	1000

Purge Start Time: 9:45      Purge End Time: 10:10      Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1000 L/min      Purged/Sampled by: M. Schwab  
 Weather Conditions: 34°F, Mostly Sunny, 5-10 mph S  
 Comments: \_\_\_\_\_







## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rosemont  
 Project Number: 350170  
 Sampling Device: Dedicated Bladder Pump  
 Date: 2/21/17  
 Well ID: D-552

Tubing Diameter (ID): 2 inches  
 Depth to Water: 110.10' ft, TOC  
 Depth to Bottom of Well: 121.81' ft, TOC  
 Feet of Water in Well: 11.71 ft  
 Volume of Water in Well: 1.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhm/cm)	Temperature (°F)	Purge Rate (L/min)
1	110.20	11.70	817	8.45	1000
2.5	110.20	11.32	902	9.81	1000
5	110.20	10.71	927	9.52	1000
7.5	110.20	9.77	920	9.76	1000
10	110.20	9.44	920	9.75	1000

Purge Start Time: 7:50      Purge End Time: 8:00      Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1000 L/min      Purged/Sampled by: N. Schlegel  
 Weather Conditions: 30°F, Foggy, 0-5 mph SW  
 Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 2/21/17  
 Well ID: D-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.81 ft, TOC  
 Depth to Bottom of Well: 157.1 ft, TOC  
 Feet of Water in Well: 29.29 ft  
 Volume of Water in Well: 6.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Micros/cm)	Temperature (°F)	Purge Rate (L/min)
5	118.10	8.00	811	8.52	1000
10	118.10	8.93	799	9.57	1000
15	119.10	8.99	809	9.53	1000
20	118.10	8.92	810	9.59	1000
25	118.10	8.92	814	9.59	1000

Purge Start Time: 8:35 Purge End Time: 9:00 Total Volume Purged: 6.5 gal  
 Approximate Purge Rate: 1000 L/min Purged/Sampled by: M. Schwagerl  
 Weather Conditions: 30°F, Foggy, 0-5 mph SUN  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SIC B Rosemont  
 Project Number: 3501770  
 Sampling Device: Debris net Bladder Pump  
 Date: 2/22/17  
 Well ID: D-8

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.92 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 20.18 ft  
 Volume of Water in Well: 3.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	110.20	9.55	685	8.19	1000
5	110.20	9.55	690	9.87	1000
10	110.20	9.51	691	9.82	1000
15	110.20	9.50	679	9.82	1000

Purge Start Time: 8:25 Purge End Time: 9:40 Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1000 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 39°F, mostly cloudy, 0-5 mph SE  
 Comments: Collect DUP 1





**Chain of Custody Record**

Amherst, NY 14228-2223 phone 716.691.2600 fax 716.691.7991  
 Regulatory Program:  DW  NPDES  RCRA  Other

Client Contact: SKB Environmental  
 13425 Courthouse Blvd  
 Rosemount, MN 55068  
 (651) 438-1500 Phone  
 (651) 438-1549 FAX  
 Project Name: RSMNT 2017 CCR GW Event 1  
 Site:  
 P O # 3063-17-00267

Project Manager: Ryan Van Dette  
 Site Contact: Nathaniel Beineman Date: 2/21/17  
 Lab Contact: Carrier:

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
 TAT if different from below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Sample Specific Notes:																			
						Filtered Sample (Y/N)	Form MS / MSD (Y/N)	Metals (total) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS											
D-55Z	2/21/17	8:25	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-5D	2/21/17	9:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-3S	2/21/17	9:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-3D	2/21/17	10:10	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-1S	2/21/17	11:10	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-1D	2/21/17	11:55	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-2S	2/21/17	13:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-2D	2/21/17	13:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-4S	2/21/17	14:10	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-4D	2/21/17	14:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-8	2/22/17	9:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D-9	2/22/17	9:20	Grab	Water	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
 Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the  
 Are any samples from a listed EPA Hazardous Waste?  Please List any EPA Waste Codes for the sample in the  
 Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.:	Received by:	Company:	Received in Laboratory by:	Company:
Relinquished by: <i>MW Spill</i>	Date/Time: 2/23/17 12:00	Company: <i>GES</i>	Received by:	Company:
Relinquished by:	Date/Time:	Company:	Received in Laboratory by:	Company:
Relinquished by:	Date/Time:	Company:	Received in Laboratory by:	Company:

**Chain of Custody Record**

**TestAmerica Buffalo**  
10 Hazelwood Drive  
Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 1  
Site:  
P O # 3063-17-00267

**Regulatory Program:**  DW  NPDES  RCRA  Other:  
**Project Manager:** Ryan Van Dette  
**Tel/Fax:**  
**Analysis Turnaround Time**  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact:** Nathaniel Beineman  
**Date:** 2/22/17  
**Carrier:**  
**Lab Contact:**

**Project No.:** 1 of 2 COCs  
**Sampler:**  
**For Lab Use Only:**  
**Walk-in Client:**  
**Lab Sampling:**  
**Job / SDG No.:**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Test Parameters										Sample Specific Notes:
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS		
V-45	2/22/17	11:30	Grab	Water	5	N	X	X	X	X	X	X	X	X		
V-4D	2/22/17	12:30	Grab	Water	5	N	X	X	X	X	X	X	X	X		
V-53	2/22/17	12:55	Grab	Water	5	N	X	X	X	X	X	X	X	X		
V-5D	2/22/17	13:50	Grab	Water	5	N	X	X	X	X	X	X	X	X		
DVP-1	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X		
DVP-2	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X		
Field Blank 1	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X		
Field Blank 2	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X		

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other  
**Possible Hazard Identification:** Please List any EPA Waste Codes for the sample in the Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**  
**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

## **Field Blanks and Replicates**

All quality assurance/quality control (*QA/QC*) samples will be collected in the same manner and type of container as the corresponding primary samples. A field method (equipment) blank and an ambient air field blank will be collected to detect method or background contamination. Replicate samples will be collected to evaluate variability in analytical methods. These *QA/QC* samples will be collected at sampling points suspected to have relatively high levels of contamination in order to provide meaningful information for blank or replicate sample evaluation. Trip blanks will accompany VOC sample vials at all times in order to detect contaminants that may leak into the vials during transportation or storage.

*QA/QC* samples will be assigned identification aliases on the sample bottle label and on the chain of custody sheet to avoid alerting laboratories that the sample is a blank or replicate sample. The true identity of the *QA/QC* samples will be recorded in the Field Sampling Log and in the Sampling and Analysis Report.

### ***Trip Blanks***

One trip blank (composed of three replicate vials) will accompany each shipment of VOC samples. The trip blank vials will be filled and sealed by the Laboratory with laboratory-controlled, organic-free water. The prefilled

40-ml purge and trap vials will accompany the sample vials to and from the field in the cooler, to the well head, etc., so that the blanks are exposed to precisely the same conditions as the actual samples. The trip blanks will not be opened until they are analyzed in the laboratory along with the VOC samples they have accompanied.

### ***Field Methods & Equipment Blanks***

One field methods blank will be collected during up gradient sampling and one field methods blank will be collected during down gradient well sampling. Field methods blanks will be analyzed for the same parameters as the primary samples during that sampling event. Sample containers and preservatives used for each blank will be the same as those used for each primary sample. All containers shall be pre-cleaned according to the laboratory's *QA/QC* program, in the same manner as primary sample bottles. The sample blank containers will be filled in the field in a manner that simulates actual field sampling methods. Blank samples for organic analyses will be filled with laboratory-controlled organic-free water. Trace metals blanks will be filled with laboratory-prepared, triple deionized water through a metals filter. One equipment blank will be collected during each sampling event from the depth sounder for VOC's. Also, one bottle blank will be collected at the laboratory.

### ***Replicate Samples***

One replicate set will be collected during sampling of up gradient wells and one replicate set will be collected during sampling of down gradient wells. Replicates will be collected and analyzed for the same parameters as the primary samples.

Replicate samples for each parameter group will be collected immediately after the corresponding primary sample, with a sampling stream that is steady and continuous. *{Note: All replicates are not sampled together, but are sampled immediately after the primary sample from each parameter group.}* The time of replicate sample collection will be recorded in the Field Log Book. The time that each individual container was filled will be recorded on the container and on the Chain of Custody form, in the same manner as primary samples.





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: CKB Rosemont  
 Project Number: 3801770  
 Sampling Device: dedicated bladder pump  
 Date: 3/21/17  
 Well ID: V-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 22.62 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 66.58 ft  
 Volume of Water in Well: 10.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	22.62'	7.63	802	8.16	1
10	22.62'	7.84	794	9.29	1
20	22.62'	7.85	794	9.27	1
30	22.62'	7.86	794	9.30	1

Purge Start Time: 11:30 Purge End Time: 12:00 Total Volume Purged: 11.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schigel  
 Weather Conditions: 36°F, clear, 10-15 mph N  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site:         CK-B Reservoir          
 Project Number:         350770          
 Sampling Device:         Dedicated Bladder Pump          
 Date:         3/2/17          
 Well ID:         V-5D        

Tubing Diameter (ID):         2         inches  
 Depth to Water:         31.69         ft, TOC  
 Depth to Bottom of Well:         101.54         ft, TOC  
 Feet of Water in Well:         69.85         ft  
 Volume of Water in Well:         11.4         gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
1	31.69	9.87	736	7.68	1
10	31.69	9.92	757	9.63	1
20	31.69	8.07	750	9.64	1
35	31.69	9.10	758	9.64	1

Purge Start Time:         14:15             Purge End Time:         14:40             Total Volume Purged:         120         gal  
 Approximate Purge Rate:         1 L/min             Purged/Sampled by:         N. Senlagel          
 Weather Conditions:         36°F clear, 10-15 mph N          
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 3/28/17  
 Well ID: U-55

Tubing Diameter (ID): 2 inches  
 Depth to Water: 29.72 ft, TOC  
 Depth to Bottom of Well: 42.5 ft, TOC  
 Feet of Water in Well: 12.78 ft  
 Volume of Water in Well: 2.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) C	Purge Rate (L/min)
1	29.73'	8.12	794	10.85	1
2	29.73'	7.89	900	10.97	1
3	29.73'	7.77	799	10.82	1
4	29.73'	7.76	900	11.03	1
5	29.73'	7.74	900	11.04	1

Purge Start Time: 14:15 Purge End Time: 14:20 Total Volume Purged: 2.1 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Seitzinger  
 Weather Conditions: 36°F, clear, 10-15 mph N  
 Comments: collect DVP-1



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rosemont  
Project Number: 3501770  
Sampling Device: DeAerated bladder pump  
Date: 3/22/17  
Well ID: D-552

Tubing Diameter (ID): 2 inches  
Depth to Water: 110.14 ft, TOC  
Depth to Bottom of Well: 121.81 ft, TOC  
Feet of Water in Well: 11.66 ft  
Volume of Water in Well: 1.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos / cm)	Temperature (°F)	Purge Rate (L/min)
1	110.15	7.92	912	9.13	
2	110.8	7.88	922	9.23	
3	110.15	7.84	929	9.34	
4	110.15	7.76	935	9.55	
5	110.15	7.70	938	9.74	

Purge Start Time: 9:00 Purge End Time: 9:05 Total Volume Purged: 2.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Seitel  
Weather Conditions: 21°F, clear, 5-10 mph, E  
Comments: \_\_\_\_\_  
\_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SRB Rossmore  
 Project Number: 3301770  
 Sampling Device: PED/LABOR 1  
 Date: 3/8/2/17  
 Well ID: D-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.84 ft, TOC  
 Depth to Bottom of Well: 157.00 ft, TOC  
 Feet of Water in Well: 39.26 ft  
 Volume of Water in Well: 6.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
1	117.85	7.06	903	9.34	1
10	117.86	7.06	907	9.35	1
20	117.86	7.07	919	9.46	1
30	117.86	7.07	921	9.37	1

Purge Start Time: 9:00 Purge End Time: 9:30 Total Volume Purged: 6.5 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel

Weather Conditions: 21°F, clear, 5-10 mph E

Comments: \_\_\_\_\_

\_\_\_\_\_



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Blanket Pump  
 Date: 3/22/17  
 Well ID: D-35

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.16 ft, TOC  
 Depth to Bottom of Well: 135.13 ft, TOC  
 Feet of Water in Well: 23.97 ft  
 Volume of Water in Well: 3.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmho/cm)	Temperature (°F) °C	Purge Rate (L/min)
1	111.17	7.65	852	9.74	1
3	111.17	7.61	568	9.52	1
6	111.17	7.55	878	7.50	1
10	111.17	7.52	872	9.47	1

Purge Start Time: 11:20 Purge End Time: 11:30 Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 25°F, 5-10 mph SE  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated bladder pump  
 Date: 3/22/17  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.89 ft, TOC  
 Depth to Bottom of Well: 155.5 ft, TOC  
 Feet of Water in Well: 43.62 ft  
 Volume of Water in Well: 7.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Micro/cm)	Temperature (°F)	Purge Rate (L/min)
1	111.89	7.46	814	69.90	
6	111.89	7.46	814	71.70	
12	111.89	7.45	814	72.96	
20	111.89	7.45	814	73.71	

Purge Start Time: 11:20     Purge End Time: 11:40     Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min     Purged/Sampled by: N. Schladt  
 Weather Conditions: 25°F, 10-15 mph SE  
 Comments: collect DUP-2





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB ROD/WIND  
 Project Number: 3901770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 3/22/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 123.89 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 12.09 ft  
 Volume of Water in Well: 2.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
1	123.89	7.60	912	9.40	1
2	123.89	7.72	933	10.43	1
4	123.89	7.40	934	10.51	1
5	123.89	7.37	934	10.52	1

Purge Start Time: 13:00      Purge End Time: 13:05      Total Volume Purged: 2.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schlegel  
 Weather Conditions: 35°F, partly cloudy, 5-10 mph SE  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: Q2B Footmount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 3/22/17  
 Well ID: D-11

Tubing Diameter (ID): 2 inches  
 Depth to Water: 120.65 ft, TOC  
 Depth to Bottom of Well: 264.5 ft, TOC  
 Feet of Water in Well: 43.85 ft  
 Volume of Water in Well: 7.2 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
1	120.66	7.90	780	10.79	
10	120.66	7.91	779	10.79	
20	120.66	7.91	780	10.79	
30	120.60	7.90	779	10.79	

Purge Start Time: 13:00 Purge End Time: 13:30 Total Volume Purged: 7.5 gal

Approximate Purge Rate: \_\_\_\_\_ Purged/Sampled by: N. Sel...

Weather Conditions: \_\_\_\_\_

Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Treatment  
 Project Number: 3501720  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 7/22/17  
 Well ID: D-25

Tubing Diameter (ID): 2 inches  
 Depth to Water: 118.94 ft, TOC  
 Depth to Bottom of Well: 134.78 ft, TOC  
 Feet of Water in Well: 15.84 ft  
 Volume of Water in Well: 2.6 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Micros/cm)	Temperature (°F)	Purge Rate (L/min)
1	118.95'	7.99	921	9.43	1
3	118.95'	7.68	837	9.76	1
6	118.95'	7.48	846	10.04	1
10	118.95'	7.51	951	10.09	1

Purge Start Time: 14:35 Purge End Time: 14:45 Total Volume Purged: 3.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel

Weather Conditions: 36°F, mostly cloudy, 10-15 mph SE

Comments: \_\_\_\_\_  
 \_\_\_\_\_













Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 2  
Site:  
P O # 3063-17-00427

**Project Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact: Nathaniel Beineman** Date: 3/23/17  
Lab Contact: Carrier: 1 of 2 COCs

Sampler:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-15	3/22/17	13:05	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-10	3/22/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-25	3/22/17	14:45	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-20	3/22/17	15:05	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-35	3/22/17	11:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-30	3/22/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-45	3/23/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-40	3/23/17	9:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-55Z	3/22/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-50	3/22/17	9:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-8	3/23/17	10:25	Grab	Water	5	X	X	X	X	X	X	X	X	X	
P-9	3/23/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Return to Client  Disposal by Lab  Archive for Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, Beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seal No.:  
Relinquished by: *Made Pollock* Yes  No   
Relinquished by: *APL* Date/Time: 3/23/17  
Relinquished by: *GES* Date/Time: 3-23-17  
Relinquished by: *74* Date/Time:  
Relinquished by: *APL* Date/Time:

Received by: *APL* Date/Time: 3-23  
Received by: *APL* Date/Time:  
Received in Laboratory by: *APL* Date/Time:

Company: *APL* Company: *APL* Company: *APL*

Therm ID No.: 30

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Ryan Van Dette  
Tel/Fax: \_\_\_\_\_  
Site Contact: Nathaniel Beineman Date: 3/23/17  
Carrier: \_\_\_\_\_

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 2  
Site:  
P O # 3063-17-00427

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
U-45	3/21/17	11:40	Grab	Water	5		X	X	X	X	X	X	X	X	
U-4D	3/21/17	12:50	Grab	Water	5		X	X	X	X	X	X	X	X	
U-55	3/21/17	14:20	Grab	Water	5		X	X	X	X	X	X	X	X	
U-5D	3/21/17	14:40	Grab	Water	5		X	X	X	X	X	X	X	X	
DUP-1	3/21/17	--	Grab	Water	5		X	X	X	X	X	X	X	X	
DUP-2	3/22/17	--	Grab	Water	5		X	X	X	X	X	X	X	X	
Field Blank 1	3/21/17	15:30	Grab	Water	5		X	X	X	X	X	X	X	X	
Field Blank 2	3/21/17	12:30	Grab	Water	5		X	X	X	X	X	X	X	X	
Equipment Blank	3/23/17	15:00	Grab	Water	5		X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Therm ID No.:
Relinquished by: <i>[Signature]</i>	Company: GES	Date/Time: 3/23/17 15:30
Relinquished by: <i>[Signature]</i>	Company: TA	Date/Time: 3-23
Relinquished by: <i>[Signature]</i>	Company: TA	Date/Time: 15:30

## **Field Blanks and Replicates**

All quality assurance/quality control (*QA/QC*) samples will be collected in the same manner and type of container as the corresponding primary samples. A field method (equipment) blank and an ambient air field blank will be collected to detect method or background contamination. Replicate samples will be collected to evaluate variability in analytical methods. These *QA/QC* samples will be collected at sampling points suspected to have relatively high levels of contamination in order to provide meaningful information for blank or replicate sample evaluation. Trip blanks will accompany VOC sample vials at all times in order to detect contaminants that may leak into the vials during transportation or storage.

*QA/QC* samples will be assigned identification aliases on the sample bottle label and on the chain of custody sheet to avoid alerting laboratories that the sample is a blank or replicate sample. The true identity of the *QA/QC* samples will be recorded in the Field Sampling Log and in the Sampling and Analysis Report.

### *Trip Blanks*

One trip blank (composed of three replicate vials) will accompany each shipment of VOC samples. The trip blank vials will be filled and sealed by the Laboratory with laboratory-controlled, organic-free water. The prefilled

40-ml purge and trap vials will accompany the sample vials to and from the field in the cooler, to the well head, etc., so that the blanks are exposed to precisely the same conditions as the actual samples. The trip blanks will not be opened until they are analyzed in the laboratory along with the VOC samples they have accompanied.

### *Field Methods & Equipment Blanks*

One field methods blank will be collected during up gradient sampling and one field methods blank will be collected during down gradient well sampling. Field methods blanks will be analyzed for the same parameters as the primary samples during that sampling event. Sample containers and preservatives used for each blank will be the same as those used for each primary sample. All containers shall be pre-cleaned according to the laboratory's *QA/QC* program, in the same manner as primary sample bottles. The sample blank containers will be filled in the field in a manner that simulates actual field sampling methods. Blank samples for organic analyses will be filled with laboratory-controlled organic-free water. Trace metals blanks will be filled with laboratory-prepared, triple deionized water through a metals filter. One equipment blank will be collected during each sampling event from the depth sounder for VOC's. Also, one bottle blank will be collected at the laboratory.

### *Replicate Samples*

One replicate set will be collected during sampling of up gradient wells and one replicate set will be collected during sampling of down gradient wells. Replicates will be collected and analyzed for the same parameters as the primary samples.

Replicate samples for each parameter group will be collected immediately after the corresponding primary sample, with a sampling stream that is steady and continuous. *{Note: All replicates are not sampled together, but are sampled immediately after the primary sample from each parameter group.}* The time of replicate sample collection will be recorded in the Field Log Book. The time that each individual container was filled will be recorded on the container and on the Chain of Custody form, in the same manner as primary samples.





















### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: S6B Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 4/24/13  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.59 ft, TOC  
 Depth to Bottom of Well: 186.5 ft, TOC  
 Feet of Water in Well: 43.91 ft  
 Volume of Water in Well: 7.2 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmho/cm)	Temperature (°F)	Purge Rate (L/min)
0	111.60	7.63	841	11.03	1
5	111.61	7.64	820	10.97	1
10	111.61	7.64	827	10.86	1
15	111.61	7.66	825	10.82	1

Purge Start Time: 13:25 Purge End Time: 13:40 Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: A. Scholze  
 Weather Conditions: 68°F, cloudy, 15-20 mph S  
 Comments: collect DUP-2



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 350/770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 4/24/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 123.43 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 12.54 ft  
 Volume of Water in Well: 2.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	123.45	7.95	833	14.86	1
3	123.46	7.47	844	12.39	1
6	123.46	7.37	841	12.41	1
9	123.46	7.32	842	12.40	1

Purge Start Time: 14:30      Purge End Time: 14:40      Total Volume Purged: 2.5 gal

Approximate Purge Rate: 1 L/min      Purged/Sampled by: Dr. Schlegel

Weather Conditions: 68°F, cloudy, 15-20 mph S

Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SRB Recharge  
Project Number: 3501770  
Sampling Device: dedicated bladder pump  
Date: 4/24/17  
Well ID: D-1D

Tubing Diameter (ID): 2 inches  
Depth to Water: 120.38 ft, TOC  
Depth to Bottom of Well: 164.5 ft, TOC  
Feet of Water in Well: 44.12 ft  
Volume of Water in Well: 7.2 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°K)°C	Purge Rate (L/min)
0	120.39	8.12	799	11.48	1
5	120.39	8.05	801	11.36	1
10	120.39	8.05	802	11.35	1
15	120.39	8.05	802	11.37	1
20	120.39	8.05	802	11.38	1

Purge Start Time: 14:30 Purge End Time: 14:50 Total Volume Purged: 7.5 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: H. Schlegel  
Weather Conditions: 66°F, cloudy, 15-20 mph S  
Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: DPAC 9000 Bladder Pump  
 Date: 4/24/17  
 Well ID: D-25

Tubing Diameter (ID): 2 inches  
 Depth to Water: 118.47 ft, TOC  
 Depth to Bottom of Well: 134.78 ft, TOC  
 Feet of Water in Well: 16.31 ft  
 Volume of Water in Well: 2.7 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	118.48	7.41	826	13.39	1
2	118.49	7.49	856	11.58	1
4	118.49	7.44	845	11.27	1
5	118.49	7.37	840	11.15	1

Purge Start Time: 15:30 Purge End Time: 15:35 Total Volume Purged: 3.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel

Weather Conditions: 80 °F, cloudy, 15-20 mph S

Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: S/LB Reservoir  
 Project Number: 350170  
 Sampling Device: Dedicated Bladder Pump  
 Date: 4/24/17  
 Well ID: D-20

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.52 ft, TOC  
 Depth to Bottom of Well: 163.90 ft, TOC  
 Feet of Water in Well: 46.46 ft  
 Volume of Water in Well: 7.6 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	117.52	7.89	793	10.56	1
5	117.53	7.89	792	10.60	1
10	117.53	7.89	792	10.57	1
15	117.53	7.90	792	10.53	1

Purge Start Time: 15:30      Purge End Time: 15:45      Total Volume Purged: 9.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: A. Schlager  
 Weather Conditions: 70°F, cloudy, 15-20 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 4/25/17  
 Well ID: D-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 105.81 ft, TOC  
 Depth to Bottom of Well: 120.4 ft, TOC  
 Feet of Water in Well: 14.59 ft  
 Volume of Water in Well: 2.34 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	105.82	8.24	808	12.82	1
2	105.83	7.70	832	11.75	1
4	105.83	7.64	836	11.45	1
5	105.83	7.58	839	11.33	1

Purge Start Time: 9:30 Purge End Time: 9:35 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: W. Schlegel  
 Weather Conditions: 59° F, cloudy, 5-10 mph S  
 Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SK-B Rosemount  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 4/25/17  
 Well ID: D-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 106.14 ft, TOC  
 Depth to Bottom of Well: 138.7 ft, TOC  
 Feet of Water in Well: 32.56 ft  
 Volume of Water in Well: 5.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microS/cm)	Temperature (°F)	Purge Rate (L/min)
0	106.14	7.96	915	11.16	1
5	106.15	7.97	916	11.13	1
10	106.15	7.95	915	11.12	1
15	106.15	7.98	916	11.11	1

Purge Start Time: 9:30 Purge End Time: 9:45 Total Volume Purged: 6.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel

Weather Conditions: 59°F, cloudy, 5-10 mph S

Comments: \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB ROBINSON  
 Project Number: 3501770  
 Sampling Device: Pedicapped Bubbler Pump  
 Date: 4/25/17  
 Well ID: D-8

Tubing Diameter (ID): 7 inches  
 Depth to Water: 109.36 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 20.74 ft  
 Volume of Water in Well: 3.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhm/cm)	Temperature (°F/C)	Purge Rate (L/min)
0	109.37	8.45	697	10.85	1
5	109.38	8.60	699	10.82	1
10	109.38	8.78	689	10.35	1
15	109.38	8.77	690	10.26	1

Purge Start Time: 10:00 Purge End Time: 10:15 Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlagel  
 Weather Conditions: 59°F, mostly cloudy, 5-10 mph S  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SEB Rosemont      Tubing Diameter (ID): 2 inches  
Project Number: 7501770      Depth to Water: 99.39 ft, TOC  
Sampling Device: Dedicated Bladder Pump      Depth to Bottom of Well: 110.5 ft, TOC  
Date: 4/25/17      Feet of Water in Well: 19.15 ft  
Well ID: D-9      Volume of Water in Well: 3.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°K)(C)	Purge Rate (L/min)
0	99.37	8.56	839	10.58	1
5	99.40	8.29	850	10.63	1
10	99.49	8.48	833	10.65	1
15	99.40	8.49	835	10.60	1

Purge Start Time: 10:45      Purge End Time: 11:00      Total Volume Purged: 3.5 gal  
Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schlagel  
Weather Conditions: 57°F, cloudy, 0-5 mph S  
Comments: collect equipment blank

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_  
 Project Manager: Ryan Van Dette  
 Site Contact: Nathaniel Beineman Date: 4/24/17  
 Carrier: \_\_\_\_\_  
 Lab Contact: \_\_\_\_\_  
 COC No: 1 of 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time										Sample Specific Notes:
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS		
U-45	4/24/17	10:45	Grab	Water	5	X	X	X	X	X	X	X	X	X		
U-47	4/24/17	11:00	Grab	Water	5	X	X	X	X	X	X	X	X	X		
U-55	4/24/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	X		
U-5D	4/24/17	11:50	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-35Z	4/24/17	12:45	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-5D	4/24/17	13:00	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-3 S	4/24/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-3 D	4/24/17	13:40	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-1 S	4/24/17	14:40	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-1 D	4/24/17	14:50	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-2 S	4/24/17	15:35	Grab	Water	5	X	X	X	X	X	X	X	X	X		
D-2 D	4/24/17	15:45	Grab	Water	5	X	X	X	X	X	X	X	X	X		

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other \_\_\_\_\_  
 Possible Hazard Identification: \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Comments Section if the lab is to dispose of the sample: \_\_\_\_\_

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Received by: \_\_\_\_\_ Date/Time: 4/27/17 7:00  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received in Laboratory by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
 Company: SKB Environmental  
 Date/Time: 4/27/17 7:00

Relinquished by: *[Signature]*  
 Company: SKB Environmental  
 Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

**Chain of Custody Record**

Amherst, NY 14228-2223 phone 716.691.2600 fax 716.691.7991  
 Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact: SKB Environmental  
 13425 Courthouse Blvd  
 Rosemount, MN 55068  
 (651) 438-1500 Phone  
 (651) 438-1549 FAX  
 Project Name: RSMNT 2017 CCR GW Event 3  
 Site:  
 P O # 3063-17-00547

Regulatory Manager: Ryan Van Dette  
 Project Manager: Nathaniel Beineman Date: 4/24/17  
 Lab Contact: Carrier: 2 of 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time							Sample Specific Notes:
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	
DVP-1	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X	
DVP-2	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X	
Field Blank 1	4/24/17	12:00	Grab	Water	5	X	X	X	X	X	X	X	
Field Blank 2	4/24/17	14:00	Grab	Water	5	X	X	X	X	X	X	X	
D-45	4/25/17	9:35	Grab	Water	5	X	X	X	X	X	X	X	
D-4D	4/25/17	9:45	Grab	Water	5	X	X	X	X	X	X	X	
D-8	4/25/17	10:15	Grab	Water	5	X	X	X	X	X	X	X	
D-9	4/25/17	11:00	Grab	Water	5	X	X	X	X	X	X	X	
Equipment Blank	4/25/17	11:15	Grab	Water	5	X	X	X	X	X	X	X	

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other  
 Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for Months  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_  
 Custody Seal No.: \_\_\_\_\_  
 Relinquished by: *Mered Bell* Company: *GES* Date/Time: 4/26/17 7:00  
 Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rogmann  
 Project Number: 3501770  
 Sampling Device: Deaerated Bladder Pump  
 Date: 5/15/17  
 Well ID: V-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 15.53' ft, TOC  
 Depth to Bottom of Well: 34.36 ft, TOC  
 Feet of Water in Well: 18.83 ft  
 Volume of Water in Well: 3.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	15.54	8.58	837	12.68	1
2	15.55	7.78	850	9.55	1
4	15.55	7.59	847	9.38	1
5	15.55	7.57	848	9.28	1

Purge Start Time: 9:58 Purge End Time: 10:00 Total Volume Purged: 3.5 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel

Weather Conditions: 63°F, cloudy, SE 5-10 mph

Comments: \_\_\_\_\_  
 \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Radmant  
 Project Number: 350570  
 Sampling Device: Pedicated Bladder Pump  
 Date: 5/15/17  
 Well ID: V-40

Tubing Diameter (ID): 2 inches  
 Depth to Water: 22.21 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 66.99 ft  
 Volume of Water in Well: 10.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) L.	Purge Rate (L/min)
0	22.21	7.62	776	10.57	1
5	22.21	7.61	807	9.17	1
10	22.21	7.80	770	10.40	1
15	22.21	7.59	781	10.10	1
20	22.21	7.58	788	9.82	1

Purge Start Time: 9:55 Purge End Time: 10:15 Total Volume Purged: 11.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 63°F, Cloudy, SE 5-10 mph  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Doremont  
 Project Number: 3501770  
 Sampling Device: Dedicated bladder pump  
 Date: 5/15/17  
 Well ID: 1-55

Tubing Diameter (ID): 2 inches  
 Depth to Water: 29.20 ft, TOC  
 Depth to Bottom of Well: 42.5 ft, TOC  
 Feet of Water in Well: 12.3 ft  
 Volume of Water in Well: 2.2 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F/C)	Purge Rate (L/min)
0	29.20	7.74	775	10.93	1
2	29.21	7.51	790	11.30	1
4	29.21	7.47	788	11.21	1
5	29.21	7.45	784	11.18	1

Purge Start Time: 11:00 Purge End Time: 11:05 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 63°F, cloudy, SE 5-10 mph  
 Comments: Collect ~~dup~~ DUPLICATE #1





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/15/17  
 Well ID: U-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 31.32 ft, TOC  
 Depth to Bottom of Well: 101.54 ft, TOC  
 Feet of Water in Well: 70.22 ft  
 Volume of Water in Well: 11.5 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos / cm)	Temperature (°F) L	Purge Rate (L/min)
0	31.32	7.63	772	9.78	
5	31.32	7.63	772	9.78	
10	31.33	7.63	772	9.79	
15	31.33	7.63	772	9.79	

Purge Start Time: 11:00 Purge End Time: 11:15 Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 63 °F, cloudy, SE 5-10 mph  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Backhoe Pump  
 Date: 5/15/17  
 Well ID: D-552

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.87 ft, TOC  
 Depth to Bottom of Well: 121.81 ft, TOC  
 Feet of Water in Well: 11.94 ft  
 Volume of Water in Well: 1.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmho/cm)	Temperature (°C)	Purge Rate (L/min)
0	109.87	7.73	843	13.78	1
2	109.88	7.54	898	12.35	1
4	109.88	7.42	916	11.73	1
5	109.88	7.38	921	11.52	1

Purge Start Time: 11:55 Purge End Time: 12:00 Total Volume Purged: 2.0 gal  
 Approximate Purge Rate: 1/L min. Purged/Sampled by: M. Schindler  
 Weather Conditions: 66°F, cloudy, SE 5-10 mph  
 Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Regeneration  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/15/17  
 Well ID: B-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.91 ft, TOC  
 Depth to Bottom of Well: ~~157.6~~ 157.6 ft, TOC  
 Feet of Water in Well: 39.7 ft  
 Volume of Water in Well: 6.5 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	117.91	7.53	747	12.40	1
5	117.92	7.50	762	11.50	1
10	117.92	7.50	758	11.86	1
15	117.92	7.52	765	11.02	1
20	117.92	7.51	777	10.66	1

Purge Start Time: 11:55 Purge End Time: 12:15 Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 66°F cloudy, SE 5-10 mph SE  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: <u>SLB Rosemarint</u> Project Number: <u>3501770</u> Sampling Device: <u>Dedicated Bladder Pump</u> Date: <u>5/15/17</u> Well ID: <u>D-33</u>	Tubing Diameter (ID): <u>2</u> inches Depth to Water: <u>110.88</u> ft, TOC Depth to Bottom of Well: <u>135.13</u> ft, TOC Feet of Water in Well: <u>24.25</u> ft Volume of Water in Well: <u>84.0</u> gal
---	--

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) (°C)	Purge Rate (L/min)
0	110.88	7.70	862	10.57	
2	110.89	7.49	865	10.38	
4	110.89	7.46	852	10.43	
5	110.89	7.44	878	9.94	

Purge Start Time: 12:55      Purge End Time: 13:00      Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: M. Schnigel  
 Weather Conditions: 66°F, cloudy, SE 5-10 mph  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/15/17  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.69 ft, TOC  
 Depth to Bottom of Well: 156.5 ft, TOC  
 Feet of Water in Well: 44.81 ft  
 Volume of Water in Well: 7.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F/°C)	Purge Rate (L/min)
0	111.69	7.46	821	9.65	1
5	111.70	7.46	821	9.65	1
10	111.70	7.46	821	9.65	1
15	111.70	7.46	821	9.65	1

Purge Start Time: 11:55     Purge End Time: 13:10     Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min     Purged/Sampled by: M. Schladt  
 Weather Conditions: 66°F, cloudy, SE 5-10 mph  
 Comments: Collect Duplicate #2



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: 52B Rosemount  
Project Number: 3501770  
Sampling Device: Dedicated Bladder Pump  
Date: 5/16/17  
Well ID: D-15

Tubing Diameter (ID): 2 inches  
Depth to Water: 123.40 ft, TOC  
Depth to Bottom of Well: 135.97 ft, TOC  
Feet of Water in Well: 12.57 ft  
Volume of Water in Well: 2.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
<u>0</u>	<u>123.40</u>	<u>8.14</u>	<u>700</u>	<u>16.54</u>	<u>1</u>
<u>3</u>	<u>123.41</u>	<u>7.69</u>	<u>744</u>	<u>15.73</u>	<u>1</u>
<u>6</u>	<u>123.41</u>	<u>7.57</u>	<u>748</u>	<u>15.57</u>	<u>1</u>
<u>9</u>	<u>123.41</u>	<u>7.57</u>	<u>748</u>	<u>15.34</u>	<u>1</u>

Purge Start Time: 8:20 Purge End Time: 8:30 Total Volume Purged: 2.5 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. San Jose  
Weather Conditions: 83 °F, cloudy, SW, 5-10 mph  
Comments: \_\_\_\_\_  
\_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: 928 Regmont  
 Project Number: 380170  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/18/17  
 Well ID: D-1 D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 120.29 ft, TOC  
 Depth to Bottom of Well: 164.5 ft, TOC  
 Feet of Water in Well: 44.21 ft  
 Volume of Water in Well: 7.2 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0		7.82	764	11.67	1
5		7.80	765	11.65	1
10		7.80	765	11.64	1
15		7.80	766	11.63	1
20		7.79	765	11.63	1

Purge Start Time: 8:20 Purge End Time: 8:40 Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Sondagli  
 Weather Conditions: 63°F, cloudy, SW 5-10 mph  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: S/CB Rosemont  
 Project Number: 7501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/16/17  
 Well ID: D-25

Tubing Diameter (ID): 2 inches  
 Depth to Water: 118.58 ft, TOC  
 Depth to Bottom of Well: 134.78 ft, TOC  
 Feet of Water in Well: 16.2 ft  
 Volume of Water in Well: 2.7 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) C	Purge Rate (L/min)
0	118.58	7.06	807	12.44	
2	118.59	7.64	824	11.65	
4	118.59	7.58	829	11.23	
5	118.59	7.55	832	10.89	

Purge Start Time: 9:25 Purge End Time: 9:30 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 65°F, rain, SW 5-10 mph  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLR Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 5/16/17  
 Well ID: D-2.0

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.36 ft, TOC  
 Depth to Bottom of Well: 163.98 ft, TOC  
 Feet of Water in Well: 46.62 ft  
 Volume of Water in Well: 7.6 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	117.36	7.68	770	10.02	
5	117.37	7.68	770	10.01	
10	117.37	7.68	759	10.02	
15	117.37	7.69	759	10.02	

Purge Start Time: 9:28 Purge End Time: 9:40 Total Volume Purged: 8.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schigel

Weather Conditions: 65°F, rain, SW 5-10 mph

Comments: \_\_\_\_\_  
 \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rosemont  
Project Number: 3501770  
Sampling Device: Vacuumed Bladder Pump  
Date: 5/16/17  
Well ID: 0-45

Tubing Diameter (ID): 2 inches  
Depth to Water: 105.80 ft, TOC  
Depth to Bottom of Well: 120.4 ft, TOC  
Feet of Water in Well: 17.6 ft  
Volume of Water in Well: 2.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	Temperature ( $^{\circ}\text{F}$ )	Purge Rate (L/min)
0	105.80	7.82	778	12.05	1
2	105.81	7.69	817	11.56	1
4	105.81	7.63	815	10.52	1
5	105.81	7.59	814	11.38	1

Purge Start Time: 10:20 Purge End Time: 10:25 Total Volume Purged: 3.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
Weather Conditions: 64 $^{\circ}\text{F}$ , cloudy, SW 5-10 mph  
Comments: \_\_\_\_\_  
\_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rossmore  
Project Number: 3501770  
Sampling Device: Dedicated Bladder Pump  
Date: 5/16/17  
Well ID: P-4D

Tubing Diameter (ID): 2 inches  
Depth to Water: 186.07 ft, TOC  
Depth to Bottom of Well: 138.7 ft, TOC  
Feet of Water in Well: 32.63 ft  
Volume of Water in Well: 5.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos/cm}$ )	Temperature ( $^{\circ}\text{F}$ ) C	Purge Rate (L/min)
<u>0</u>	<u>106.07</u>	<u>7.65</u>	<u>745</u>	<u>11.84</u>	
<u>5</u>	<u>106.08</u>	<u>7.72</u>	<u>722</u>	<u>11.91</u>	
<u>10</u>	<u>106.08</u>	<u>7.72</u>	<u>759</u>	<u>11.84</u>	
<u>15</u>	<u>106.08</u>	<u>7.62</u>	<u>757</u>	<u>11.92</u>	

Purge Start Time: 10:20 Purge End Time: 10:35 Total Volume Purged: 6.0 gal  
Approximate Purge Rate: 1 L/min. Purged/Sampled by: N. Schlager  
Weather Conditions: 64°F, cloudy, SW 5-10 mph  
Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Recirculated Bladder Pump  
 Date: 5/16/17  
 Well ID: D-2

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.61 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 20.49 ft  
 Volume of Water in Well: 3.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umho/cm)	Temperature (°F) L.	Purge Rate (L/min)
0	109.61	8.11	650	11.90	1
5	109.62	8.01	77.2	10.60	1
10	109.62	8.01	72.2	10.46	1
15	109.63	7.99	71.4	10.50	1

Purge Start Time: 11:05      Purge End Time: 11:20      Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schibgen  
 Weather Conditions: 64°F, cloudy, 5-10 mph  
 Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SJL Rosemont  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 5/16/17  
 Well ID: D-9

Tubing Diameter (ID): 2 inches  
 Depth to Water: 47.19 ft, TOC  
 Depth to Bottom of Well: 118.5 ft, TOC  
 Feet of Water in Well: 19.31 ft  
 Volume of Water in Well: 7.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmho/cm)	Temperature (°F / °C)	Purge Rate (L/min)
0	99.19	7.92	505	11.10	1
5	99.20	7.65	827	10.64	1
10	99.20	7.51	802	10.54	1
15	99.20	7.49	798	10.40	1

Purge Start Time: 11:35 Purge End Time: 11:50 Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schayer  
 Weather Conditions: 64°F, Cloudy, S 5-10 mph  
 Comments: collect Field Blank & Equipment Blank



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SK-B Rosemont  
 Project Number: 3501770  
 Sampling Device: Recirculated Bladder Pump  
 Date: 6/26/17  
 Well ID: Ø-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 14.75 ft, TOC  
 Depth to Bottom of Well: 34.36 ft, TOC  
 Feet of Water in Well: 19.61 ft  
 Volume of Water in Well: 3.20 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	14.76	7.47	Ø47	9.91	1
2	14.77	7.40	Ø54	9.51	1
4	14.77	7.35	Ø45	9.46	1
5	14.77	7.35	Ø52	9.45	1

Purge Start Time: 11:35    Purge End Time: 11:40    Total Volume Purged: 5.0 gal  
 Approximate Purge Rate: 1 L/min    Purged/Sampled by: M. E. Lagd  
 Weather Conditions: 63°F, partly cloudy, 5-10 mph N  
 Comments: \_\_\_\_\_





### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 6/26/17  
 Well ID: V-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 21.28 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 67.92 ft  
 Volume of Water in Well: 11.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microsiemens/cm)	Temperature (°C)	Purge Rate (L/min)
0	21.28	7.67	383	10.29	1
5	21.29	7.59	801	9.47	1
10	21.29	7.60	801	9.45	1
15	21.29	7.60	801	9.45	1

Purge Start Time: 11:35 Purge End Time: 11:50 Total Volume Purged: 15.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Scudgell  
 Weather Conditions: \_\_\_\_\_  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rossmore  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 6/26/17  
 Well ID: V-55

Tubing Diameter (ID): 2 inches  
 Depth to Water: 28.70 ft, TOC  
 Depth to Bottom of Well: 42.5 ft, TOC  
 Feet of Water in Well: 14.72 ft  
 Volume of Water in Well: 2.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F/C)	Purge Rate (L/min)
0	27.78	7.12	953	10.63	1
2	27.79	7.50	1,060	10.40	1
4	27.79	7.44	1,070	10.24	1
5	27.79	7.44	1,070	10.24	1

Purge Start Time: 13:40 Purge End Time: 13:45 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schuyler

Weather Conditions: \_\_\_\_\_  
 Comments: Dup-t collected



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SKB Rossmont  
Project Number: 3501770  
Sampling Device: Dedicated bladder pump  
Date: 6/26/17  
Well ID: U-5D

Tubing Diameter (ID): 2 inches  
Depth to Water: 30.72 ft, TOC  
Depth to Bottom of Well: 101.54 ft, TOC  
Feet of Water in Well: 70.82 ft  
Volume of Water in Well: 11.54 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos/cm)	Temperature (°F/C)	Purge Rate (L/min)
0	30.72	7.87	769	10.13	1
3	30.75	7.85	753	9.95	1
10	30.73	7.66	766	10.27	1
15	30.73	7.63	766	10.28	1

Purge Start Time: 13:40 Purge End Time: 13:58 Total Volume Purged: 12.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Enayet  
Weather Conditions: 68°F, pretty cloudy, 5-10 mph W  
Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Blender Pump  
 Date: 6/27/17  
 Well ID: D-552

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.50 ft, TOC  
 Depth to Bottom of Well: 121.81 ft, TOC  
 Feet of Water in Well: 12.31 ft  
 Volume of Water in Well: 2.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	Temperature (°C)	Purge Rate (L/min)
0	121.81	7.38	975	10.05	1
2	121.82	7.43	975	10.08	1
4	121.82	7.51	974	10.04	1
5	121.82	7.40	985	10.09	1

Purge Start Time: 7:35 Purge End Time: 7:40 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schloegel  
 Weather Conditions: 54°F, sunny, 0-10 mph W  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rodman  
Project Number: 350170  
Sampling Device: DeAirCap Bladder Pump  
Date: 6/27/17  
Well ID: D-50

Tubing Diameter (ID): 2 inches  
Depth to Water: 117.16 ft, TOC  
Depth to Bottom of Well: 13210 ft, TOC  
Feet of Water in Well: 39.94 ft  
Volume of Water in Well: 6.51 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°F) C	Purge Rate (L/min)
0	117.16	7.65	804	10.14	1
15	117.17	7.68	806	10.11	1
30	117.17	7.56	809	10.08	1
45	117.17	7.58	807	10.12	1

Purge Start Time: 7:35 Purge End Time: 8:30 Total Volume Purged: 10.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Eckel

Weather Conditions: 60F, sunny, 5-10 mph W

Comments: \_\_\_\_\_  
\_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Kearsarge  
Project Number: 3501770  
Sampling Device: Pentacord Bladder Pump  
Date: 6/27/17  
Well ID: D-35  
Tubing Diameter (ID): 2 inches  
Depth to Water: 110.36 ft, TOC  
Depth to Bottom of Well: 135.15 ft, TOC  
Feet of Water in Well: 24.77 ft  
Volume of Water in Well: 4.0 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	110.36	7.87	852	12.90	1
3	110.37	7.63	895	11.05	1
6	110.38	7.42	877	10.78	1
10	110.38	7.52	894	10.59	1

Purge Start Time: 10:00      Purge End Time: 10:10      Total Volume Purged: 5.0 gal  
Approximate Purge Rate: 1 L/min.      Purged/Sampled by: M. Schlapel  
Weather Conditions: 64°F, sunny, 5-10 mph SW  
Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 6/27/17  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 111.14' ft, TOC  
 Depth to Bottom of Well: 155.5' ft, TOC  
 Feet of Water in Well: 44.36' ft  
 Volume of Water in Well: 7.23 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microS/cm)	Temperature (°C)	Purge Rate (L/min)
0	111.14	7.47	818	10.40	1
10	111.15	7.57	800	10.39	1
20	111.15	7.59	819	10.37	1
30	111.15	7.62	820	10.39	1

Purge Start Time: 10:00 Purge End Time: 10:30 Total Volume Purged: 10.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegli  
 Weather Conditions: 64°F, cloudy, 5-10 mph SW  
 Comments: collect DVP-2





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SEB ~~D-15~~ Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Obidder Pump  
 Date: 6/27/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 122.88' ft, TOC  
 Depth to Bottom of Well: 135.97' ft, TOC  
 Feet of Water in Well: 13.09 ft  
 Volume of Water in Well: 2.1 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	122.88	7.87	718	13.76	1
2	122.89	7.73	820	12.78	1
4	122.90	7.52	835	12.80	1
5	122.90	7.50	832	12.25	1

Purge Start Time: 13:20 Purge End Time: 13:25 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Senigaglia  
 Weather Conditions: 72°F, partly cloudy, 10-15 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SAB Rosenmont  
Project Number: 3561770  
Sampling Device: Denitrola Bladder Pump  
Date: 11/27/12  
Well ID: D-1D

Tubing Diameter (ID): 2 inches  
Depth to Water: 119.76 ft, TOC  
Depth to Bottom of Well: 164.5 ft, TOC  
Feet of Water in Well: 44.74 ft  
Volume of Water in Well: 7.3 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Microh/cm )	Temperature (°F) °C	Purge Rate (L/min)
0	119.76'	7.81	755	13.36	
10	119.77'	7.95	774	12.11	
20	119.78'	8.01	778	11.86	
30	119.78'	7.88	791	11.74	
		8.00	791	11.63	

Purge Start Time: 14:00     Purge End Time: 14:30     Total Volume Purged: 7.5 gal  
Approximate Purge Rate: 1 L/min     Purged/Sampled by: N. Emling  
Weather Conditions: 73°F, partly cloudy, 10-15 mph S  
Comments: \_\_\_\_\_  
\_\_\_\_\_



WELL PURGING RECORD
LOW-FLOW SAMPLING METHOD

Site: SRB Rosemont
Project Number: 3501770
Sampling Device: Peristaltic bladder pump
Date: 6/28/17
Well ID: W-25

Tubing Diameter (ID): 2 inches
Depth to Water: 118.06 ft, TOC
Depth to Bottom of Well: 134.78 ft, TOC
Feet of Water in Well: 16.72 ft
Volume of Water in Well: 2.7 gal

Table with 6 columns: Elapsed Time (min), Depth to Water (ft, TOC), pH (s.u.), Specific Conductance (umhos/cm), Temperature (°F), Purge Rate (L/min). Contains 4 rows of data.

Purge Start Time: 8:55 Purge End Time: 9:05 Total Volume Purged: 3.0 gal
Approximate Purge Rate: 1 L/min. Purged/Sampled by: M. Schlager
Weather Conditions: 63°F, cloudy, 10-15 mph South
Comments:



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated bladder pump  
 Date: \_\_\_\_\_  
 Well ID: D-2D  
 Tubing Diameter (ID): 2 inches  
 Depth to Water: 116.89 ft, TOC  
 Depth to Bottom of Well: 163.98 ft, TOC  
 Feet of Water in Well: 47.09 ft  
 Volume of Water in Well: 7.87 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	116.89	7.76	771	10.53	1
10	116.90	7.84	771	10.34	1
20	116.90	7.75	770	10.37	1
30	116.90	7.77	771	10.36	1

Purge Start Time: 8:58 Purge End Time: 9:25 Total Volume Purged: 10.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 63°F cloudy, 15-20 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemead  
 Project Number: 7501770  
 Sampling Device: Dedicated Shallow Pump  
 Date: 6/20/17  
 Well ID: D-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 105.34 ft, TOC  
 Depth to Bottom of Well: 120.4 ft, TOC  
 Feet of Water in Well: 15.06 ft  
 Volume of Water in Well: 2.45 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	Temperature ( $^{\circ}\text{R}$ ) $^{\circ}\text{C}$	Purge Rate (L/min)
0	105.34	7.92	786	12.51	1
2	105.35	7.82	816	11.64	1
4	105.35	7.63	817	11.66	1
5	105.35	7.76	817	11.60	1

Purge Start Time: 11:05 Purge End Time: 11:10 Total Volume Purged: 2.45 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlugel  
 Weather Conditions: 64<sup>o</sup>F, cloudy, 10-Kmph S  
 Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 350170  
 Sampling Device: Dedicated bladder pump  
 Date: 6/28/17  
 Well ID: D-4P

Tubing Diameter (ID): 2 inches  
 Depth to Water: 105.50' ft, TOC  
 Depth to Bottom of Well: 138.71 ft, TOC  
 Feet of Water in Well: 33.21 ft  
 Volume of Water in Well: 5.4 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°K) °C	Purge Rate (L/min)
0	105.50	7.70	790	11.40	1
10	105.51	7.91	790	11.44	1
20	105.51	7.75	802	11.32	1
30	105.51	7.82	801	11.30	1

Purge Start Time: 11:05 Purge End Time: 11:35 Total Volume Purged: 8.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: A. Schlegel  
 Weather Conditions: 6WF, cloudy, 10-15 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_







### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 6/20/17  
 Well ID: D-9

Tubing Diameter (ID): 1 inches  
 Depth to Water: 98.46 ft, TOC  
 Depth to Bottom of Well: 118.5 ft, TOC  
 Feet of Water in Well: 20.04 ft  
 Volume of Water in Well: 3.26 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) %	Purge Rate (L/min)
0	98.46	8.07	747	13.62	1
5	98.47	7.74	833	12.61	1
10	98.48	7.71	813	12.18	1
15	98.48	7.76	837	12.13	1

Purge Start Time: 13:30 Purge End Time: 13:45 Total Volume Purged: 5.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlyger  
 Weather Conditions: 78°F, cloudy, 15-20 mph S  
 Comments: \_\_\_\_\_

Regulatory Program:          DW          NPDES          RCRA          Other:           
 Project Manager: Ryan Van Datta      Site Contact: Nathaniel Beineman      Date: 6/26/17  
 Tel/Fax:               Lab Contact:               Carrier:               COC No: 1 of 1 COCs

Client Contact	SKB Environmental 13425 Courthouse Blvd Rosemount, MN 55068 (651) 438-1500 (651) 438-1549 Project Name: RSMNT 2017 CCR GW Event 5 Site: P O # 3063-17-00813	Analysis Turnaround Time WORKING DAYS CALENDAR DAYS TAT if different from Below 2 weeks 1 week 2 days 1 day	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact: <u>        </u>							Sample Specific Notes:
								Filtered Sample (Y/N)	Performs MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	
			6/26/17	11:40	Grab	Water	7	X	X	X	X	X	X	X	
			6/26/17	11:50	Grab	Water	7	X	X	X	X	X	X	X	
			6/26/17	12:45	Grab	Water	7	X	X	X	X	X	X	X	
			6/26/17	13:55	Grab	Water	7	X	X	X	X	X	X	X	
			6/26/17	15:20	Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	
					Grab	Water	7	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
 Possible Hazard Identification:           
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard          Flammable          Skin Irritant          Poison B          Unknown           
 Return to Client          Disposal by Lab          Archive for          Months

Custody Seal No.:	Cooler Temp. (°C):	Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: <u>        </u>	Company: <u>        </u>	Received by: <u>        </u>	Company: <u>        </u>	Date/Time: <u>        </u>
Relinquished by: <u>        </u>	Company: <u>        </u>	Received by: <u>        </u>	Company: <u>        </u>	Date/Time: <u>        </u>
Relinquished by: <u>        </u>	Company: <u>        </u>	Received in Laboratory by: <u>        </u>	Company: <u>        </u>	Date/Time: <u>        </u>

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 5  
Site:  
P O # 3063-17-00813

Project Manager: Ryan Van Dette  
Tel/Fax:  
Analysis Turnaround Time  
WORKING DAYS  
CALENDAR DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Site Contact: Nathaniel Beineman Date: 6/27/17  
Lab Contact: Carrier:  
COC No: 1 of 1 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)							Sample Specific Notes:
						Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	
D-552	6/27/17	7:40	Grab	Water	7	X	X	X	X	X	X	X	
D-5D	6/27/17	8:30	Grab	Water	7	X	X	X	X	X	X	X	
D-35	6/27/17	10:10	Grab	Water	7	X	X	X	X	X	X	X	
D-3D	6/27/17	10:30	Grab	Water	7	X	X	X	X	X	X	X	
Duplicate 2	6/27/17	-	Grab	Water	7	X	X	X	X	X	X	X	
Field Blank 2	6/27/17	12:15	Grab	Water	7	X	X	X	X	X	X	X	
D-15	6/27/17	13:25	Grab	Water	7	X	X	X	X	X	X	X	
D-1D	6/27/17	14:30	Grab	Water	7	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium  
Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months  
Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Corrd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_  
Custody Seal No.: \_\_\_\_\_  
Relinquished by: *[Signature]* Company: *SKB* Date/Time: 6/27/17 9:00  
Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.  
COC No: 1 of 1 COCs

Regulatory Program: DW NPDES RCRA Other:

Client Contact: SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 5  
Site: P O # 3063-17-00813

Project Manager: Ryan Van Dette  
Tel/Fax: \_\_\_\_\_

Site Contact: Nathaniel Beineman  
Date: 6/28/17  
Carrier: \_\_\_\_\_

Lab Contact: \_\_\_\_\_

Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	PH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-25	6/28/17	9:05	Grab	Water	7			X	X	X	X	X	X	X	
D-2D	6/28/17	9:25	Grab	Water	7			X	X	X	X	X	X	X	
D-45	6/28/17	11:10	Grab	Water	7			X	X	X	X	X	X	X	
D-4D	6/28/17	11:35	Grab	Water	7			X	X	X	X	X	X	X	
D-8	6/28/17	12:40	Grab	Water	7			X	X	X	X	X	X	X	
D-9	6/28/17	15:45	Grab	Water	7			X	X	X	X	X	X	X	
Equipment Blank	6/28/17	16:00	Grab	Water	7			X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_

Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: 6/28/17 7:00

Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received in Laboratory by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_ Yes  No

Relinquished by: *Nathaniel Beineman* Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

## **Field Blanks and Replicates**

All quality assurance/quality control (*QA/QC*) samples will be collected in the same manner and type of container as the corresponding primary samples. A field method (equipment) blank and an ambient air field blank will be collected to detect method or background contamination. Replicate samples will be collected to evaluate variability in analytical methods. These *QA/QC* samples will be collected at sampling points suspected to have relatively high levels of contamination in order to provide meaningful information for blank or replicate sample evaluation. Trip blanks will accompany VOC sample vials at all times in order to detect contaminants that may leak into the vials during transportation or storage.

*QA/QC* samples will be assigned identification aliases on the sample bottle label and on the chain of custody sheet to avoid alerting laboratories that the sample is a blank or replicate sample. The true identity of the *QA/QC* samples will be recorded in the Field Sampling Log and in the Sampling and Analysis Report.

### ***Trip Blanks***

One trip blank (composed of three replicate vials) will accompany each shipment of VOC samples. The trip blank vials will be filled and sealed by the Laboratory with laboratory-controlled, organic-free water. The prefilled

40-ml purge and trap vials will accompany the sample vials to and from the field in the cooler, to the well head, etc., so that the blanks are exposed to precisely the same conditions as the actual samples. The trip blanks will not be opened until they are analyzed in the laboratory along with the VOC samples they have accompanied.

### ***Field Methods & Equipment Blanks***

One field methods blank will be collected during up gradient sampling and one field methods blank will be collected during down gradient well sampling. Field methods blanks will be analyzed for the same parameters as the primary samples during that sampling event. Sample containers and preservatives used for each blank will be the same as those used for each primary sample. All containers shall be pre-cleaned according to the laboratory's *QA/QC* program, in the same manner as primary sample bottles. The sample blank containers will be filled in the field in a manner that simulates actual field sampling methods. Blank samples for organic analyses will be filled with laboratory-controlled organic-free water. Trace metals blanks will be filled with laboratory-prepared, triple deionized water through a metals filter. One equipment blank will be collected during each sampling event from the depth sounder for VOC's. Also, one bottle blank will be collected at the laboratory.

### ***Replicate Samples***

One replicate set will be collected during sampling of up gradient wells and one replicate set will be collected during sampling of down gradient wells. Replicates will be collected and analyzed for the same parameters as the primary samples.

Replicate samples for each parameter group will be collected immediately after the corresponding primary sample, with a sampling stream that is steady and continuous. *{Note: All replicates are not sampled together, but are sampled immediately after the primary sample from each parameter group.}* The time of replicate sample collection will be recorded in the Field Log Book. The time that each individual container was filled will be recorded on the container and on the Chain of Custody form, in the same manner as primary samples.





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Recreated Bladder Pump  
 Date: 7/25/17  
 Well ID: V-40

Tubing Diameter (ID): 2 inches  
 Depth to Water: 20.89 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 68.31 ft  
 Volume of Water in Well: 11.12 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhm/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	20.89	7.58	801	10.94	1
5	20.90	7.68	782	9.51	1
10	20.90	7.67	787	9.21	1
15	20.90	7.66	787	9.13	1

Purge Start Time: 9:15 Purge End Time: 9:30 Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schilder  
 Weather Conditions: 66°F, cloudy, 10-15 mph south

Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
Project Number: 3501770  
Sampling Device: Duplicat'd Bladder Pump  
Date: 7/25/17  
Well ID: U-55

Tubing Diameter (ID): 2 inches  
Depth to Water: 27.26 ft, TOC  
Depth to Bottom of Well: 42.5 ft, TOC  
Feet of Water in Well: 15.24 ft  
Volume of Water in Well: 2.40 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) %	Purge Rate (L/min)
0	27.26	7.60	180	11.04	1
2	27.27	7.45	883	9.71	1
4	27.27	7.45	884	9.70	1
5	27.27	7.47	885	9.70	1

Purge Start Time: 10:20 Purge End Time: 10:25 Total Volume Purged: 2.5 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
Weather Conditions: 70°F, partly cloudy, 10-15 mph south  
Comments: Duplicate #1 collected





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/25/17  
 Well ID: V-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 30.12 ft, TOC  
 Depth to Bottom of Well: 101.54 ft, TOC  
 Feet of Water in Well: 71.42 ft  
 Volume of Water in Well: 11.64 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	30.12	7.59	758	9.54	1
5	30.13	7.61	755	10.58	1
10	30.17	7.60	755	10.57	1
15	30.13	7.61	756	10.54	1

Purge Start Time: 10:20      Purge End Time: 10:35      Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: M. Seelye  
 Weather Conditions: 70°F, pretty cloudy, 10-15 mph south  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SK-B Rossmont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/25/17  
 Well ID: D-552

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.03 ft, TOC  
 Depth to Bottom of Well: 121.81 ft, TOC  
 Feet of Water in Well: 12.78 ft  
 Volume of Water in Well: 2.08 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	109.03	7.54	942	18.24	
2	109.04	7.40	962	10.15	
4	109.04	7.43	962	9.98	
5	109.04	7.44	962	9.96	

Purge Start Time: 11:25      Purge End Time: 11:30      Total Volume Purged: 2.5 gal

Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schlegel

Weather Conditions: 70% partly cloudy, 10-15 mph south

Comments: \_\_\_\_\_

\_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bubbler Pump  
 Date: 7/25/17  
 Well ID: D-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 116.66 ft, TOC  
 Depth to Bottom of Well: 192.10 ft, TOC  
 Feet of Water in Well: 35.50 ft  
 Volume of Water in Well: 5.79 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	116.60	7.50	780	10.70	
15	116.61	7.51	789	10.64	
30	116.61	7.52	788	10.40	
45	116.61	7.49	788	10.42	

Purge Start Time: 11:25 Purge End Time: 12:10 Total Volume Purged: 6.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 70°F, partly cloudy, 10 - 15 mph southerly  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 2501770  
 Sampling Device: Denzit-ek Bladder Pump  
 Date: 7/25/17  
 Well ID: D-35

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.95 ft, TOC  
 Depth to Bottom of Well: 135.13 ft, TOC  
 Feet of Water in Well: 25.18 ft  
 Volume of Water in Well: 4.10 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMho/cm)	Temperature (°C)	Purge Rate (L/min)
0	109.95	7.70	859	19.00	1
3	109.96	7.53	872	10.54	1
6	109.97	7.49	884	10.58	1
10	109.97	7.48	887	10.56	1

Purge Start Time: 17:10 Purge End Time: 17:20 Total Volume Purged: 5.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schigel  
 Weather Conditions: 75°F, partly cloudy, 15-20 mph S  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/29/17  
 Well ID: D-30

Tubing Diameter (ID): 2 inches  
 Depth to Water: 110.63 ft, TOC  
 Depth to Bottom of Well: 155.50 ft, TOC  
 Feet of Water in Well: 44.87 ft  
 Volume of Water in Well: 7.31 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (UMHDS/L <sub>m</sub> )	Temperature (°F/°C)	Purge Rate (L/min)
0	110.63	7.57	800	10.46	1
10	110.64	7.56	812	10.30	1
20	110.65	7.48	803	10.29	1
30	110.65	7.47	815	10.26	1

Purge Start Time: 13:10 Purge End Time: 13:40 Total Volume Purged: 10.0 gal  
 Approximate Purge Rate: 1L/min. Purged/Sampled by: M. Schlegel  
 Weather Conditions: 75°F, part cloudy, 15-20 mph south  
 Comments: Duplicate #2 collected



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 350170  
 Sampling Device: rediated bladder pump  
 Date: 7/25/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 122.46 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 13.51 ft  
 Volume of Water in Well: 22 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos/cm)	Temperature (°C)	Purge Rate (L/min)
0	122.46	7.74	784	14.85	1
2	122.47	7.60	770	13.51	1
4	122.47	7.49	830	12.62	1
5	122.47	7.35	838	12.59	1

Purge Start Time: 14:20 Purge End Time: 14:25 Total Volume Purged: 2.5 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel

Weather Conditions: 79°F, partly cloudy, 15-20 mph south

Comments: \_\_\_\_\_  
 \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 7/25/17  
 Well ID: P2-1D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 119.33 ft, TOC  
 Depth to Bottom of Well: 164.5 ft, TOC  
 Feet of Water in Well: 45.17 ft  
 Volume of Water in Well: 736 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhm/cm)	Temperature (°F/°C)	Purge Rate (L/min)
0	119.33	7.85	763	12.07	1
10	119.34	7.80	793	11.17	1
20	119.34	7.77	784	11.16	1
30	119.34	7.74	784	11.15	1

Purge Start Time: 14:40 Purge End Time: 15:10 Total Volume Purged: 75 gal  
 Approximate Purge Rate: 2 L/min. Purged/Sampled by: M. Schlager  
 Weather Conditions: 79°F, partly cloudy, 15-20 mph south  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SLB Rosemont  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 7/26/17  
 Well ID: D-75

Tubing Diameter (ID): 2 inches  
 Depth to Water: 117.63 ft, TOC  
 Depth to Bottom of Well: 134.70 ft, TOC  
 Feet of Water in Well: 17.15 ft  
 Volume of Water in Well: 2.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	117.63	8.14	746	15.31	1
3	117.64	7.59	819	10.90	1
6	117.65	7.61	832	10.66	1
10	117.65	7.58	832	10.68	1

Purge Start Time: 8:10 Purge End Time: 8:20 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 76 °F, cloudy, 0-5 mph North  
 Comments: \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Regmant  
 Project Number: 350170  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/26/17  
 Well ID: D-20

Tubing Diameter (ID): 2 inches  
 Depth to Water: 116.44 ft, TOC  
 Depth to Bottom of Well: 163.93 ft, TOC  
 Feet of Water in Well: 47.54 ft  
 Volume of Water in Well: 775 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	116.44	7.67	763	10.24	1
10	116.45	7.69	766	9.49	1
20	116.45	7.71	768	10.06	1
30	116.45	7.70	770	10.04	1

Purge Start Time: 8:10 Purge End Time: 8:40 Total Volume Purged: 8.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: AC Schlager  
 Weather Conditions: 70°F, cloudy, 0-5 mph North  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/26/17  
 Well ID: D-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 104.95 ft, TOC  
 Depth to Bottom of Well: 120.4 ft, TOC  
 Feet of Water in Well: 15.45 ft  
 Volume of Water in Well: 2.52 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Microsiemens/cm)	Temperature (°K)°C	Purge Rate (L/min)
0	104.95	7.88	800	11.83	1
2	104.96	7.60	814	10.97	1
4	104.97	7.52	815	10.92	1
5	104.97	7.56	815	10.96	1

Purge Start Time: 9:05 Purge End Time: 9:10 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1L/min. Purged/Sampled by: N. Schlegel  
 Weather Conditions: 70°F, cloudy, 0-5 mph NW  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



WELL PURGING RECORD
LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir
Project Number: 750170
Sampling Device: Dedicated Bladder Pump
Date: 7/26/17
Well ID: D-4D

Tubing Diameter (ID): 2 inches
Depth to Water: 105.12 ft, TOC
Depth to Bottom of Well: 138.71 ft, TOC
Feet of Water in Well: 33.59 ft
Volume of Water in Well: 5.40 gal

Table with 6 columns: Elapsed Time (min), Depth to Water (ft, TOC), pH (s.u.), Specific Conductance (µmhos/cm), Temperature (°C), Purge Rate (L/min). Contains data for 0, 10, 20, and 30 minutes.

Purge Start Time: 9:05 Purge End Time: 9:35 Total Volume Purged: 6.0 gal
Approximate Purge Rate: 1L/min Purged/Sampled by: M. Schlapel
Weather Conditions: 70°F, Cloudy, 0-5 mph North

Comments:



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 7/26/17  
 Well ID: D-8

Tubing Diameter (ID): 2 inches  
 Depth to Water: 108.64 ft, TOC  
 Depth to Bottom of Well: 170.1 ft, TOC  
 Feet of Water in Well: 2.46 ft  
 Volume of Water in Well: 3.5 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	Temperature ( $^{\circ}\text{X}$ ) $^{\circ}\text{C}$	Purge Rate (L/min)
0	108.64	8.09	643	14.65	1
3	108.65	8.00	644	11.57	1
6	108.66	8.12	641	9.77	1
10	109.66	8.16	641	9.79	1

Purge Start Time: 9:45 Purge End Time: 9:55 Total Volume Purged: 3.5 gal  
 Approximate Purge Rate: 1L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 70°F, cloudy, 0-5 mph north  
 Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
Project Number: 3501770  
Sampling Device: Dedicated bladder pump  
Date: 7/26/17  
Well ID: D-9

Tubing Diameter (ID): 2 inches  
Depth to Water: 98.51 ft, TOC  
Depth to Bottom of Well: 118.5 ft, TOC  
Feet of Water in Well: 19.99 ft  
Volume of Water in Well: 3-26 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Purge Rate (L/min)
0	98.51	7.95	788	12.73	1
5	98.52	7.54	808	11.64	1
10	98.53	7.54	897	11.40	1
15	98.53	7.55	783	11.24	1

Purge Start Time: 10:25 Purge End Time: 10:40 Total Volume Purged: 4.0 gal

Approximate Purge Rate: 1 L/min. Purged/Sampled by: N. Schlager

Weather Conditions: 70°F, cloudy, 0-5 mph north

Comments: \_\_\_\_\_

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:          DW          NPDES          RCRA          Other:         

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 OCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

**Project Manager: Ryan Van Dette**  
Tel/Fax:           
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

**Site Contact: Nathaniel Beineman** Date: 7/25/17  
**Lab Contact:**          Carrier:         

COC No: 1 of 2 COCs  
Sampler:           
For Lab Use Only:  
Walk-in Client:           
Lab Sampling:           
Job / SDG No.:         

Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
7/25/17	9:20	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	9:30	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	10:25	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	-	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	10:35	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	11:30	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	12:10	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	13:20	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	13:40	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	-	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	11:00	Grab	Water	7			X	X	X	X	X	X	X	
7/25/17	14:00	Grab	Water	7			X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard          Flammable          Skin Irritant          Poison B          Unknown           
Return to Client          Disposal by Lab          Archive for          Months

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

Cooler Temp (°C): Obs'd:          Cor'd:          Therm ID No.:         

Relinquished by:          Company:          Date/Time: 7-26-17 1500  
Relinquished by:          Company:          Date/Time: 7-26-17 1500  
Relinquished by:          Company:          Date/Time:

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program: DW NPDES RCRA Other:

Project Manager: Ryan Van Dette

Site Contact: Nathaniel Beineman

Carrier: 712517

COC No: 1 of 2 COCs

SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

Client Contact

Tell/Fax: \_\_\_\_\_

Analysis Turnaround Time  
WORKING DAYS  
CALENDAR DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Lab Contact: \_\_\_\_\_

Site Contact: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-1D	7/25/17	15:10	Grab	Water	7			X	X	X	X	X	X	X	
D-1S	7/25/17	14:25	Grab	Water	7			X	X	X	X	X	X	X	
D-2S	7/26/17	8:20	Grab	Water	7			X	X	X	X	X	X	X	
D-2D	7/26/17	8:40	Grab	Water	7			X	X	X	X	X	X	X	
D-4S	7/26/17	9:10	Grab	Water	7			X	X	X	X	X	X	X	
D-4D	7/26/17	9:35	Grab	Water	7			X	X	X	X	X	X	X	
D-8	7/26/17	9:55	Grab	Water	7			X	X	X	X	X	X	X	
D-9	7/26/17	10:40	Grab	Water	7			X	X	X	X	X	X	X	
Equipment Blank	7/26/17	11:00	Grab	Water	7			X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Cooler Temp. (°C): Obs'd: _____	Corr'd: _____	Therm ID No.: _____
Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Company: <i>JA</i>	Date/Time: <i>7-26-17 14:50</i>
Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Company: _____	Date/Time: _____
Relinquished by: _____	Received in Laboratory by: _____	Company: _____	Date/Time: _____



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 8/14/17  
 Well ID: W-48

Tubing Diameter (ID): 2 inches  
 Depth to Water: 14.06 ft, TOC  
 Depth to Bottom of Well: 34.36 ft, TOC  
 Feet of Water in Well: 20.30 ft  
 Volume of Water in Well: 3.32 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmho/cm)	Temperature (°R) °C	Purge Rate (L/min)
0	14.00	7.60	825	12.61	1
2	14.01	7.32	843	10.26	1
4	14.02	7.52	845	10.13	1
5	14.02	7.30	844	10.12	1

Purge Start Time: 10:50    Purge End Time: 10:55    Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1L/min    Purged/Sampled by: N. Schlagel  
 Weather Conditions: 64°F, Cloudy, 0-5 mph East  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_





# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Restaurant  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 8/14/17  
 Well ID: V-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 20.62 ft, TOC  
 Depth to Bottom of Well: 87.2 ft, TOC  
 Feet of Water in Well: 28.58 ft  
 Volume of Water in Well: 11.18 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mhos/cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Purge Rate (L/min)
0	20.62	7.48	774	10.35	
5	20.62	7.52	764	9.67	
10	20.64	7.41	763	9.54	
15	20.64	7.46	763	9.50	

Purge Start Time: 10:50 Purge End Time: 11:05 Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schayer  
 Weather Conditions: 64F, cloudy, 0-5 mph East  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD

Site: SKB Rossmore  
Project Number: 3501770  
Sampling Device: Dedicated Bladder Pump  
Date: 8/14/17  
Well ID: U-55

Tubing Diameter (ID): 2 inches  
Depth to Water: 26.80 ft, TOC  
Depth to Bottom of Well: 42.5 ft, TOC  
Feet of Water in Well: 15.7 ft  
Volume of Water in Well: 2.56 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu$ hos/cm)	Temperature ( $^{\circ}$ F/ $^{\circ}$ C)	Purge Rate (L/min)
<u>0</u>	<u>26.80</u>	<u>7.30</u>	<u>783</u>	<u>10.55</u>	<u>1</u>
<u>2</u>	<u>26.81</u>	<u>7.34</u>	<u>791</u>	<u>10.49</u>	<u>1</u>
<u>4</u>	<u>26.82</u>	<u>7.37</u>	<u>790</u>	<u>10.45</u>	<u>1</u>
<u>5</u>	<u>26.82</u>	<u>7.37</u>	<u>790</u>	<u>10.44</u>	<u>1</u>

Purge Start Time: 11:45 Purge End Time: 11:50 Total Volume Purged: 3.0 gal  
Approximate Purge Rate: 1L/min. Purged/Sampled by: N. Schlager  
Weather Conditions: 64 $^{\circ}$ F, cloudy 0-5 mph East  
Comments: Duplicate #1 collected



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Roanmont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 8/14/17  
 Well ID: U-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 29.72 ft, TOC  
 Depth to Bottom of Well: 101.54 ft, TOC  
 Feet of Water in Well: 71.82 ft  
 Volume of Water in Well: 11.71 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	27.72	7.58	729	10.37	
5	27.73	7.58	729	10.38	
10	27.74	7.58	729	10.38	
15	27.74	7.58	729	10.37	

Purge Start Time: 11:45 Purge End Time: 12:00 Total Volume Purged: 12.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schildgen  
 Weather Conditions: 64°F, cloudy, 0-4 mph E-W  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
Project Number: 3501770  
Sampling Device: Peristaltic Bladder Pump  
Date: 8/1/17  
Well ID: D-552

Tubing Diameter (ID): 2 inches  
Depth to Water: 108.67 ft, TOC  
Depth to Bottom of Well: 121.81 ft, TOC  
Feet of Water in Well: 13.14 ft  
Volume of Water in Well: 2.14 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microsi/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	108.67	7.32	881	12.33	1
2	108.68	7.34	922	10.97	1
4	108.69	7.33	929	10.54	1
5	108.69	7.27	929	10.54	1

Purge Start Time: 13:15 Purge End Time: 13:20 Total Volume Purged: 3.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
Weather Conditions: 64°F, cloudy, 0-5 mph East  
Comments: \_\_\_\_\_  
\_\_\_\_\_



WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
Project Number: 3501770  
Sampling Device: Peristaltic Bladder Pump  
Date: 8/1/17  
Well ID: D-5D

Tubing Diameter (ID): 2 inches  
Depth to Water: 116.2 ft, TOC  
Depth to Bottom of Well: 152.10 ft, TOC  
Feet of Water in Well: 35.90 ft  
Volume of Water in Well: 5.85 gal

Table with 6 columns: Elapsed Time (min), Depth to Water (ft, TOC), pH (s.u.), Specific Conductance (µmhos/cm), Temperature (°F) °C, Purge Rate (L/min). Data rows show values at 0, 15, 30, and 45 minutes.

Purge Start Time: 13:15 Purge End Time: 14:00 Total Volume Purged: 6.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlager  
Weather Conditions: 64°F, cloudy, 0 - 5 mph East  
Comments:



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
Project Number: 3501770  
Sampling Device: Degreased Bladder Pump  
Date: 8/14/17  
Well ID: 0-35

Tubing Diameter (ID): 2 inches  
Depth to Water: 109.50 ft, TOC  
Depth to Bottom of Well: 135.13 ft, TOC  
Feet of Water in Well: 25.63 ft  
Volume of Water in Well: 4.18 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhos / cm.)	Temperature (°K) °C	Purge Rate (L/min)
0	109.50	7.34	868	12.12	1
3	109.51	7.30	870	11.74	1
6	109.52	7.24	880	10.97	1
10	109.52	7.29	882	10.87	1

Purge Start Time: 19:10 Purge End Time: 19:20 Total Volume Purged: 5.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Senapati  
Weather Conditions: 66°F, cloudy, 0 - 5 mph NE  
Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB ROD mount  
Project Number: 3501770  
Sampling Device: Peristaltic Bladder Pump  
Date: 9/14/17  
Well ID: D-3D

Tubing Diameter (ID): 2 inches  
Depth to Water: 110.27 ft, TOC  
Depth to Bottom of Well: 155.50 ft, TOC  
Feet of Water in Well: 45.23 ft  
Volume of Water in Well: 7.37 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	110.27	7.47	700	10.70	
10	110.28	7.48	702	10.72	
20	110.29	7.48	706	10.69	
30	110.29	7.47	700	10.70	

Purge Start Time: 11:10 Purge End Time: 11:40 Total Volume Purged: 8.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlagel  
Weather Conditions: 66°F, cloudy, 0-5 mph NE  
Comments: Duplicate #2 collected



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 8/15/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 122.18 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 13.79 ft  
 Volume of Water in Well: 2.25 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	122.18	7.55	780	13.54	1
2	122.19	7.53	810	11.95	1
4	122.20	7.28	800	11.85	1
5	122.20	7.29	812	11.83	1

Purge Start Time: 8:40 Purge End Time: 8:45 Total Volume Purged: 2.5 gal  
 Approximate Purge Rate: 1L/min Purged/Sampled by: N. Enlager  
 Weather Conditions: 59°F, cloudy, 5-10 mph East  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
 Project Number: 3501770  
 Sampling Device: Dechlorated Blender Pump  
 Date: 8/15/17  
 Well ID: D-10

Tubing Diameter (ID): 2 inches  
 Depth to Water: 119.02 ft, TOC  
 Depth to Bottom of Well: 164.5 ft, TOC  
 Feet of Water in Well: 45.48 ft  
 Volume of Water in Well: 7.41 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (MicroS/cm)	Temperature (°R) °C	Purge Rate (L/min)
0	119.02	7.87	737	11.86	1
10	119.03	7.77	745	11.57	1
20	119.04	7.75	743	11.47	1
30	119.04	7.78	746	11.46	1

Purge Start Time: 8:50 Purge End Time: 9:20 Total Volume Purged: 7.5 gal  
 Approximate Purge Rate: 1 L/min. Purged/Sampled by: M. Schlegel  
 Weather Conditions: 59°F, cloudy, 0-5 mph East  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 8/15/17  
 Well ID: D-25

Tubing Diameter (ID): 2 inches  
 Depth to Water: 116.90 ft, TOC  
 Depth to Bottom of Well: 134.78 ft, TOC  
 Feet of Water in Well: 17.88 ft  
 Volume of Water in Well: 2.91 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	116.90	7.40	780	12.72	1
3	116.91	7.42	785	11.37	1
6	116.92	7.46	795	11.33	1
10	116.93	7.43	796	11.39	1

Purge Start Time: 9:45 Purge End Time: 9:55 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 59°F, mostly cloudy, 0-5 mph East  
 Comments: \_\_\_\_\_



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SKB Roseman  
Project Number: 3501770  
Sampling Device: Dedicated Bladder Pump  
Date: 8/15/17  
Well ID: D-2D

Tubing Diameter (ID): 2 inches  
Depth to Water: 116.00 ft, TOC  
Depth to Bottom of Well: 165.98 ft, TOC  
Feet of Water in Well: 47.98 ft  
Volume of Water in Well: 7.82 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	116.00	7.65	730	10.77	
10	116.01	7.66	733	10.76	
20	116.02	7.68	733	10.75	
30	116.02	7.65	733	10.76	

Purge Start Time: 9:45 Purge End Time: 10:15 Total Volume Purged: 8.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Scola

Weather Conditions: 59°F, cloudy, 0 - 5 mph East

Comments: \_\_\_\_\_  
\_\_\_\_\_



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: S/L B Rosemead      Tubing Diameter (ID): 2 inches  
 Project Number: 3501770      Depth to Water: 104.52 ft, TOC  
 Sampling Device: Dedicated Blender Pump      Depth to Bottom of Well: 120.4 ft, TOC  
 Date: 8/15/17      Feet of Water in Well: 15.88 ft  
 Well ID: D-45      Volume of Water in Well: 2.54 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (umhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
<u>0</u>	<u>104.52</u>	<u>7.57</u>	<u>779</u>	<u>11.81</u>	
<u>2</u>	<u>104.53</u>	<u>7.57</u>	<u>774</u>	<u>11.82</u>	
<u>4</u>	<u>104.54</u>	<u>7.53</u>	<u>778</u>	<u>11.88</u>	
<u>5</u>	<u>104.54</u>	<u>7.55</u>	<u>780</u>	<u>11.98</u>	

Purge Start Time: 10:35      Purge End Time: 10:40      Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schlagel  
 Weather Conditions: 59 °F, partly cloudy, 0 - 5 mph East  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SK B Roadway  
Project Number: 3501770  
Sampling Device: Dedicated Bladder Pump  
Date: 8/15/17  
Well ID: D-4 D

Tubing Diameter (ID): 2 inches  
Depth to Water: 104.75 ft, TOC  
Depth to Bottom of Well: 138.7 ft, TOC  
Feet of Water in Well: 32.96 ft  
Volume of Water in Well: 5.54 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	104.75	7.50	781	11.37	1
10	104.78	7.53	780	11.40	1
20	104.77	7.52	780	11.38	1
30	104.77	7.51	780	11.39	1

Purge Start Time: 10:35 Purge End Time: 11:05 Total Volume Purged: 6.0 gal  
Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
Weather Conditions: 63°F, mostly cloudy, 0-5 mph East  
Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SK-B Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bidder Pump  
 Date: 9/11/17  
 Well ID: D-8

Tubing Diameter (ID): 2 inches  
 Depth to Water: 108.02 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 22.08 ft  
 Volume of Water in Well: 3.60 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	108.02	8.10	607	15.34	
3	108.03	8.07	594	10.59	
6	108.04	8.04	592	10.57	
10	108.04	8.05	593	10.57	

Purge Start Time: 11:20      Purge End Time: 11:30      Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: N. Schildgell  
 Weather Conditions: 63°F, partly cloudy, 0-5 mph East  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Duplicator Bladder Pump  
 Date: 8/17  
 Well ID: D-9

Tubing Diameter (ID): 2 inches  
 Depth to Water: 97.91 ft, TOC  
 Depth to Bottom of Well: 118.5 ft, TOC  
 Feet of Water in Well: 20.59 ft  
 Volume of Water in Well: 3.36 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance ( $\mu\text{mho}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Purge Rate (L/min)
0	97.91	7.81	770	12.84	1
5	97.92	7.55	784	12.22	1
10	97.93	7.66	740	12.84	1
15	97.92	7.62	748	11.87	1

Purge Start Time: 11:58 Purge End Time: 12:10 Total Volume Purged: 4.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel  
 Weather Conditions: 66°F, cloudy, 0-5 mph SE  
 Comments: \_\_\_\_\_

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

**Project Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT\* if different from Below  
2 weeks  
1 week  
2 days  
1 day

**Site Contact: Nathaniel Beineman** Date: 8/14/17  
**Lab Contact: Carrier:**

COC No: 1 of 2 COCs

Sampler:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS
U-45	8/14/17	10:55	Grab	Water	7	X	X	X	X	X	X	X	X	X
U-40		11:05	Grab	Water	7	X	X	X	X	X	X	X	X	X
U-55		11:50	Grab	Water	7	X	X	X	X	X	X	X	X	X
Duplicate #1		-	Grab	Water	7	X	X	X	X	X	X	X	X	X
U-50		12:00	Grab	Water	7	X	X	X	X	X	X	X	X	X
Field Blank #1		12:40	Grab	Water	7	X	X	X	X	X	X	X	X	X
Field Blank #2		12:45	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-552		13:20	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-50		14:00	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-5		14:20	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-D		14:40	Grab	Water	7	X	X	X	X	X	X	X	X	X
Duplicate #2		-	Grab	Water	7	X	X	X	X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

Custody Seal No.:  
Relinquished by: *[Signature]* Yes  No   
Relinquished by: *[Signature]* Yes  No   
Relinquished by: *[Signature]* Yes  No   
Relinquished by: *[Signature]* Yes  No

Company: *[Signature]* Date/Time: 8/15/17 15:00  
Company: *[Signature]* Date/Time: 8-15 19:00

Received by: *[Signature]* Date/Time: 8-15 15:00  
Received by: *[Signature]* Date/Time: 8-15 19:00

Therm ID No.:  
Date/Time: 8-15-17 1530  
Date/Time: 8-15-17 1530



Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:          DW          NPDES          RCRA          Other:         

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

**Project Manager:** Ryan Van Dette  
**Tel/Fax:**                         

**Site Contact:** Nathaniel Beineman **Date:** 8/15/17  
**Lab Contact:**                         

**COC No.:**          of          COCs

**Sampler:**                         

**For Lab Use Only:**  
Walk-in Client:                           
Lab Sampling:                           
Job / SDG No.:                         

**Analysis Turnaround Time**  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS (Y/N)	Metals (total)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-15	8/15/17	9:45	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-20		9:20	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-25		9:55	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-20		10:15	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-45		10:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-40		11:05	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-8		11:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-9		12:10	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Equipment Block		12:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous          Emptiable          Skin Irritant          Poison B          Unknown         

Return to Client          Disposal by Lab          Archive for          Months

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**

Received by:          Date/Time:           
Received by:          Date/Time:           
Received in Laboratory by:          Date/Time:         

Cooler/Temp. (°C):          Obs'd:          Corr'd:          Therm ID No.:         

Custody Seal No.:           
Company:          Date/Time:           
Company:          Date/Time:           
Company:          Date/Time:         

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB ROBERTSON  
 Project Number: 2501770  
 Sampling Device: Dechlorinated Bladder Pump  
 Date: 9/5/17  
 Well ID: V-45

Tubing Diameter (ID): 2 inches  
 Depth to Water: 13.89 ft, TOC  
 Depth to Bottom of Well: 34.36 ft, TOC  
 Feet of Water in Well: 20.47 ft  
 Volume of Water in Well: 3.34 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	13.89	<del>7.21</del> 7.71	860	10.98	1
2	13.90	7.22	850	10.17	1
4	13.91	7.21	855	9.99	1
5	13.92	7.21	850	9.98	1

Purge Start Time: 9:15 Purge End Time: 9:20 Total Volume Purged: 5.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: Mc. Schlegel  
 Weather Conditions: 52°F, Skating, 10-15 mph NW  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



**WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD**

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bubbler Pump  
 Date: 9/5/15  
 Well ID: V-4D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 20.39 ft, TOC  
 Depth to Bottom of Well: 89.2 ft, TOC  
 Feet of Water in Well: 68.81 ft  
 Volume of Water in Well: 11.22 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Micro / cm)	Temperature (°K) °C	Purge Rate (L/min)
0	20.39	7.46	768	9.69	
5	20.40	7.38	767	9.55	
10	20.41	7.16	769	9.62	
15	20.42	7.16	769	9.62	

Purge Start Time: 9:15 Purge End Time: 9:30 Total Volume Purged: 13.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlegel

Weather Conditions: 52°F, clear, 10-15 mph NW

Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 9/5/17  
 Well ID: V-55

Tubing Diameter (ID): 2 inches  
 Depth to Water: 26.66 ft, TOC  
 Depth to Bottom of Well: 42.5 ft, TOC  
 Feet of Water in Well: 15.84 ft  
 Volume of Water in Well: 2.58 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Umho/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	26.66	7.57	807	11.41	1
2	26.67	7.24	808	10.44	1
4	26.83	7.24	809	10.37	1
5	26.69	7.26	800	10.34	1

Purge Start Time: 10:15      Purge End Time: 10:20      Total Volume Purged: 3.0 gal

Approximate Purge Rate: 1 L/min.      Purged/Sampled by: N. Schlegel

Weather Conditions: 55°F, clear, 10-15 mph NW

Comments: Duplicate # collected



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 3501710  
 Sampling Device: Dedicated bladder pump  
 Date: 9/5/16  
 Well ID: V-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 28.90 ft, TOC  
 Depth to Bottom of Well: 101.54 ft, TOC  
 Feet of Water in Well: 72.64 ft  
 Volume of Water in Well: 11.84 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)°C	Purge Rate (L/min)
0	101.54	7.56	732	10.20	1
5	101.55	7.55	732	10.23	1
10	101.56	7.56	732	10.24	1
15	101.57	7.56	733	10.23	1

Purge Start Time: 10:15 Purge End Time: 10:30 Total Volume Purged: 120 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel  
 Weather Conditions: 55°F, clear, 10-15 mph NW  
 Comments: \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemount  
 Project Number: 300770  
 Sampling Device: Permeated Bladder Pump  
 Date: 9/5/17  
 Well ID: D-552

Tubing Diameter (ID): 2 inches  
 Depth to Water: 108.35 ft, TOC  
 Depth to Bottom of Well: 121.81 ft, TOC  
 Feet of Water in Well: 13.46 ft  
 Volume of Water in Well: 7.19 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F/°C)	Purge Rate (L/min)
0	108.35	7.43	877	12.80	1
2	108.38	7.19	942	10.89	1
4	108.37	7.16	942	10.85	1
5	108.39	7.16	943	10.84	1

Purge Start Time: 11:25 Purge End Time: 11:30 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schildge  
 Weather Conditions: 59°F, partly cloudy, 15-20 mph NW  
 Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Reservoir  
 Project Number: 3501770  
 Sampling Device: Dechlorinated Bleeder Pump  
 Date: 9/5/17  
 Well ID: D-5D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 115.95 ft, TOC  
 Depth to Bottom of Well: 152.10 ft, TOC  
 Feet of Water in Well: 36.15 ft  
 Volume of Water in Well: 5.9 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos / CM)	Temperature (°F) °C	Purge Rate (L/min)
0	115.95	7.33	769	10.92	1
15	115.96	7.30	770	10.91	1
30	115.97	7.27	771	10.93	1
45	115.98	7.27	771	10.91	1

Purge Start Time: 11:25 Purge End Time: 12:00 Total Volume Purged: 60 gal  
 Approximate Purge Rate: 1 L/min. Purged/Sampled by: M. Etzinger  
 Weather Conditions: 59°F, partly cloudy, 15-20 mph NW  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



# WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SUB ROEMM  
 Project Number: 350770  
 Sampling Device: Dezinated Bladder Pump  
 Date: 9/5/17  
 Well ID: D-35

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.20 ft, TOC  
 Depth to Bottom of Well: 135.17 ft, TOC  
 Feet of Water in Well: 25.93 ft  
 Volume of Water in Well: 4.23 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (micros/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	109.20	7.67	858	13.80	1
<del>3</del>	109.21	7.22	862	11.52	1
6	109.22	7.22	864	11.42	1
10	109.23	7.22	864	11.45	1

Purge Start Time: 12:25 Purge End Time: 12:35 Total Volume Purged: 5.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: A. Schlegel  
 Weather Conditions: 61°F, mostly cloudy, 15-20 mph NW  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Deaerated Bladder Pump  
 Date: 9/5/17  
 Well ID: D-3D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 109.92 ft, TOC  
 Depth to Bottom of Well: 195.50 ft, TOC  
 Feet of Water in Well: 45.58 ft  
 Volume of Water in Well: 7.48 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (microhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	109.92	7.27	774	11.35	
10	109.93	7.28	775	11.28	
20	109.94	7.27	775	11.27	
30	109.95	7.27	775	11.26	

Purge Start Time: 12:25      Purge End Time: 12:55      Total Volume Purged: 8.0 gal  
 Approximate Purge Rate: 1 L/min      Purged/Sampled by: M. Schlegel  
 Weather Conditions: 61°F, mostly cloudy, 15-20 mph  
 Comments: Duplicate #2 collected



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: 4K-B Placement  
 Project Number: 3501770  
 Sampling Device: Peristaltic Bladder Pump  
 Date: 9/6/17  
 Well ID: D-15

Tubing Diameter (ID): 2 inches  
 Depth to Water: 121.78 ft, TOC  
 Depth to Bottom of Well: 135.97 ft, TOC  
 Feet of Water in Well: 12.19 ft  
 Volume of Water in Well: 199 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Umhos/cm)	Temperature (°K) °C	Purge Rate (L/min)
0	121.78	7.39	797	11.53	1
2	121.79	7.10	835	11.39	1
4	121.96	7.01	840	11.38	1
5	121.81	7.01	840	11.38	1

Purge Start Time: 7:55 Purge End Time: 8:00 Total Volume Purged: 3.0 gal  
 Approximate Purge Rate: 1 L/min. Purged/Sampled by: N. Schlegel  
 Weather Conditions: 40°f, sunny, 0-5 mph NW  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_



WELL PURGING RECORD  
LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
Project Number: 7501770  
Sampling Device: Dedicated Bladder Pump  
Date: 9/6/17  
Well ID: D-1D

Tubing Diameter (ID): 2 inches  
Depth to Water: 118.63 ft, TOC  
Depth to Bottom of Well: 164.5 ft, TOC  
Feet of Water in Well: 45.87 ft  
Volume of Water in Well: 7.48 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
<u>0</u>	<u>118.63</u>	<u>7.61</u>	<u>750</u>	<u>11.59</u>	
<u>10</u>	<u>118.64</u>	<u>7.49</u>	<u>758</u>	<u>11.28</u>	
<u>20</u>	<u>118.65</u>	<u>7.46</u>	<u>758</u>	<u>11.25</u>	
<u>30</u>	<u>118.66</u>	<u>7.46</u>	<u>758</u>	<u>11.24</u>	

Purge Start Time: 8:10 Purge End Time: 8:40 Total Volume Purged: 8.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlagel

Weather Conditions: 48°F, sunny, 0-5 mph NW

Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 350770  
 Sampling Device: Decontam. Bladder Pump  
 Date: 9/17  
 Well ID: D-25

Tubing Diameter (ID): 2 inches  
 Depth to Water: 116.85 ft, TOC  
 Depth to Bottom of Well: 134.78 ft, TOC  
 Feet of Water in Well: 17.93 ft  
 Volume of Water in Well: 2.92 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Umho/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	116.85	7.34	808	11.40	1
3	116.86	7.20	810	10.89	1
6	116.87	7.19	811	10.84	1
10	116.88	7.19	809	10.86	1

Purge Start Time: 8:50 Purge End Time: 9:00 Total Volume Purged: 3.0 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel

Weather Conditions: 52°F, mostly sunny, 5-10 mph NW

Comments: \_\_\_\_\_  
 \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Roseman  
 Project Number: 350170  
 Sampling Device: Dedicated Bladder Pump  
 Date: 9/17  
 Well ID: D-2D

Tubing Diameter (ID): 2 inches  
 Depth to Water: 115.68 ft, TOC  
 Depth to Bottom of Well: 163.98 ft, TOC  
 Feet of Water in Well: 48.30 ft  
 Volume of Water in Well: 7.87 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (uMhos/cm)	Temperature (°F) °C	Purge Rate (L/min)
0	115.68	7.41	742	10.42	1
10	115.69	7.40	742	10.40	1
20	115.70	7.40	743	10.45	1
30	115.71	7.40	743	10.48	1

Purge Start Time: 8:50 Purge End Time: 9:20 Total Volume Purged: 8.0 gal  
 Approximate Purge Rate: 1 L/min Purged/Sampled by: N. Schlager  
 Weather Conditions: 52°F, mostly clear, 5-10 mph NW  
 Comments: \_\_\_\_\_



## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: S&B Robinson  
Project Number: 3501770  
Sampling Device: Dedicated Blower Pump  
Date: 9/6/17  
Well ID: D-4S

Tubing Diameter (ID): 2 inches  
Depth to Water: 104.15 ft, TOC  
Depth to Bottom of Well: 120.40 ft, TOC  
Feet of Water in Well: 16.25 ft  
Volume of Water in Well: 2.65 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F/°C)	Purge Rate (L/min)
0	104.15	7.76	788	11.95	1
2	104.16	7.32	784	11.51	1
4	104.17	7.31	784	11.48	1
5	104.18	7.31	784	11.47	1

Purge Start Time: 9:35 Purge End Time: 9:40 Total Volume Purged: 3.0 gal

Approximate Purge Rate: 1 L/min. Purged/Sampled by: M. Schlager

Weather Conditions: 52°F, mostly sunny, 5-10 mph NW

Comments: \_\_\_\_\_  
\_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rossmore  
Project Number: 350-770  
Sampling Device: Purified Bladder Pump  
Date: 9/6/17  
Well ID: D-4D

Tubing Diameter (ID): 2 inches  
Depth to Water: 104.32 ft, TOC  
Depth to Bottom of Well: 138.71 ft, TOC  
Feet of Water in Well: 34.39 ft  
Volume of Water in Well: 9.61 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°K)°C	Purge Rate (L/min)
0	104.32	7.36	771	11.40	
10	104.33	7.35	770	11.38	
20	104.34	7.35	770	11.39	
30	104.35	7.35	771	11.38	

Purge Start Time: 9:35 Purge End Time: 10:05 Total Volume Purged: 6.0 gal  
Approximate Purge Rate: 1 L/min. Purged/Sampled by: N. Schlagel  
Weather Conditions: 52°F, mostly sunny, 5-10 mph NW  
Comments: \_\_\_\_\_



### WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosgenmont  
 Project Number: 3501770  
 Sampling Device: Dedicated Bladder Pump  
 Date: 9/6/17  
 Well ID: D-6

Tubing Diameter (ID): 2 inches  
 Depth to Water: 107.73 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 22.37 ft  
 Volume of Water in Well: 2.65 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (µmhos/cm)	Temperature (°F)	Purge Rate (L/min)
0	107.73	8.00	574	12.59	
3	107.74	8.03	557	12.32	
6	107.75	8.17	564	11.64	
10	107.76	8.18	565	11.35	

Purge Start Time: 10:10 Purge End Time: 10:20 Total Volume Purged: 4.0 gal

Approximate Purge Rate: 1 L/min. Purged/Sampled by: M. Schlotter

Weather Conditions: 52°F, mostly cloudy → 5-10 mph NW

Comments: \_\_\_\_\_





## WELL PURGING RECORD LOW-FLOW SAMPLING METHOD

Site: SKB Rosemont  
 Project Number: 3501770  
 Sampling Device: Dedicated B/Older Pump  
 Date: 9/6/17  
 Well ID: D-9

Tubing Diameter (ID): 2 inches  
 Depth to Water: 97.43 ft, TOC  
 Depth to Bottom of Well: 130.1 ft, TOC  
 Feet of Water in Well: 32.67 ft  
 Volume of Water in Well: 5.33 gal

Elapsed Time (min)	Depth to Water (ft, TOC)	pH (s.u.)	Specific Conductance (Microhm/cm)	Temperature (°F)	Purge Rate (L/min)
0	97.43	7.10	750	12.52	
3	97.44	7.38	726	11.80	
6	97.45	7.43	718	11.74	
10	97.46	7.43	720	11.75	

Purge Start Time: 10:35 Purge End Time: 10:45 Total Volume Purged: 5.5 gal

Approximate Purge Rate: 1 L/min Purged/Sampled by: M. Schlegel

Weather Conditions: 55°F, mostly sunny, 5-10 mph NW

Comments: \_\_\_\_\_

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 8  
Site:  
P O # 3063-17-01128

**Project Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact: Nathaniel Beineman** Date: 9/15/17  
**Lab Contact:** Carrier: \_\_\_\_\_

COC No: 1 of 2 COCs

Sampler: \_\_\_\_\_  
For Lab Use Only:  
Walk-in Client: \_\_\_\_\_  
Lab Sampling: \_\_\_\_\_  
Job / SDG No.: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
V-45	9/17	9:20	Grab	Water	7			X	X	X	X	X	X	X	
V-47		9:30	Grab	Water	7			X	X	X	X	X	X	X	
V-55		10:20	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #1		-	Grab	Water	7			X	X	X	X	X	X	X	
V-5D		10:30	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank #1		11:00	Grab	Water	7			X	X	X	X	X	X	X	
D-55Z		11:30	Grab	Water	7			X	X	X	X	X	X	X	
D-5D		12:00	Grab	Water	7			X	X	X	X	X	X	X	
D-3S		12:35	Grab	Water	7			X	X	X	X	X	X	X	
D-3D		12:55	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #2		-	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank #2		13:30	Grab	Water	7			X	X	X	X	X	X	X	

**Preservation Used:** 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

**Possible Hazard Identification:** Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Return to Client: \_\_\_\_\_ Archive for: \_\_\_\_\_ Months

Disposal by Lab: \_\_\_\_\_

Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: 9/17/17  
Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received in Laboratory by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Corr'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_ Yes  No

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

Client Contact: SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMINT 2017 CCR GW Event 8  
Site:  
P O # 3063-17-01128

Project Manager: Ryan Van Dette  
Tel/Fax:  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT If different from Below  
2 weeks  
1 week  
2 days  
1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Carrier	Date	Site Contact: Nathaniel Beineman
D-15	9/16/17	8:30	Grab	Water	7		X	X	X	X	X	X	X			9/16/17	
D-10		8:40	Grab	Water	7		X	X	X	X	X	X	X				
D-25		9:00	Grab	Water	7		X	X	X	X	X	X	X				
D-20		9:20	Grab	Water	7		X	X	X	X	X	X	X				
D-45		9:40	Grab	Water	7		X	X	X	X	X	X	X				
D-40		10:05	Grab	Water	7		X	X	X	X	X	X	X				
D-8		10:20	Grab	Water	7		X	X	X	X	X	X	X				
D-9		10:45	Grab	Water	7		X	X	X	X	X	X	X				
Equipment Blank		11:15	Blank	Water	7		X	X	X	X	X	X	X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown  Poison B   
Return to Client:  Disposal by Lab:  Archive for: \_\_\_\_\_ Months

Custody Seal No.: \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Cor'd: \_\_\_\_\_  
Therm ID No.: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_  
Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_  
Received in Laboratory by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_



## Appendix B – Laboratory Analytical Reports

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-113905-1

TestAmerica Sample Delivery Group: 113905

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

3/3/2017 4:10:29 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Qualifiers

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

**Job ID: 480-113905-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-113905-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 2/24/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6° C, 3.0° C and 3.3° C.

#### HPLC/IC

Method(s) 300.0: The following samples were reported with elevated reporting limits for all analytes: D-5S2 (480-113905-1), D-5D (480-113905-2), D-3S (480-113905-3), D-3D (480-113905-4), D-1S (480-113905-5), D-1D (480-113905-6), D-2S (480-113905-7), D-2D (480-113905-8), D-4S (480-113905-9), D-4D (480-113905-10), D-8 (480-113905-11), D-9 (480-113905-12), U-4S (480-113905-13), U-4D (480-113905-14), U-5S (480-113905-15), U-5D (480-113905-16) and DUP-1 (480-113905-17). The sample was analyzed at a dilution based on screening results.

Method(s) 300.0: The following sample was reported with elevated reporting limits for all analytes: DUP-2 (480-113905-18). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The low level continuing calibration verification (CCVL 480-345528/22 and 480-345528/31) recovered above the upper control limit for Total Boron. The sample FIELD BLANK 1 (480-113905-19) and FIELD BLANK 2 (480-113905-20) associated with this CCVL were either ND or less than the reporting limit (RL) for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-5S2 (480-113905-1), D-5D (480-113905-2), D-3S (480-113905-3), D-3D (480-113905-4), D-1S (480-113905-5), D-1D (480-113905-6), D-2S (480-113905-7), D-2D (480-113905-8), D-4S (480-113905-9), D-4D (480-113905-10), D-8 (480-113905-11), D-9 (480-113905-12), U-4S (480-113905-13), U-4D (480-113905-14), U-5S (480-113905-15), U-5D (480-113905-16), DUP-1 (480-113905-17), DUP-2 (480-113905-18), FIELD BLANK 1 (480-113905-19) and FIELD BLANK 2 (480-113905-20).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Client Sample ID: D-5S2

## Lab Sample ID: 480-113905-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.069		0.0020		mg/L	1		6010C	Total/NA
Boron	0.048		0.020		mg/L	1		6010C	Total/NA
Calcium	115		0.50		mg/L	1		6010C	Total/NA
Chloride	40.1		1.0		mg/L	2		300.0	Total/NA
Sulfate	41.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	502		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-113905-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.055		0.0020		mg/L	1		6010C	Total/NA
Calcium	85.4		0.50		mg/L	1		6010C	Total/NA
Chloride	29.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	398		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-113905-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.048		0.0020		mg/L	1		6010C	Total/NA
Boron	0.054		0.020		mg/L	1		6010C	Total/NA
Calcium	99.5		0.50		mg/L	1		6010C	Total/NA
Chloride	51.9		1.0		mg/L	2		300.0	Total/NA
Sulfate	35.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	461		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-113905-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	96.8		0.50		mg/L	1		6010C	Total/NA
Chloride	78.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	75.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	421		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-113905-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.035		0.020		mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Client Sample ID: D-1S (Continued)

## Lab Sample ID: 480-113905-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	99.5		0.50		mg/L	1		6010C	Total/NA
Chloride	32.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	430		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-113905-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.9		0.50		mg/L	1		6010C	Total/NA
Chloride	39.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	409		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-113905-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Selenium	1.3		1.0		ug/L	1		6020A	Total/NA
Chloride	45.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	442		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-113905-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Calcium	85.1		0.50		mg/L	1		6010C	Total/NA
Chloride	32.6		1.0		mg/L	2		300.0	Total/NA
Sulfate	23.9		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	398		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-113905-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.068		0.0020		mg/L	1		6010C	Total/NA
Calcium	95.8		0.50		mg/L	1		6010C	Total/NA
Chloride	43.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	29.0		4.0		mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Client Sample ID: D-4S (Continued)

## Lab Sample ID: 480-113905-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	438		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-113905-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.061		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.9		0.50		mg/L	1		6010C	Total/NA
Chloride	42.1		1.0		mg/L	2		300.0	Total/NA
Sulfate	26.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	430		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-113905-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.064		0.0020		mg/L	1		6010C	Total/NA
Calcium	80.9		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0049		0.0040		mg/L	1		6010C	Total/NA
Cobalt	1.1		0.30		ug/L	1		6020A	Total/NA
Chloride	17.1		1.0		mg/L	2		300.0	Total/NA
Sulfate	40.0		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	387		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-113905-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	103		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.74		0.30		ug/L	1		6020A	Total/NA
Chloride	45.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	441		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4S

## Lab Sample ID: 480-113905-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.039		0.0020		mg/L	1		6010C	Total/NA
Calcium	90.3		0.50		mg/L	1		6010C	Total/NA
Chromium	0.021		0.0040		mg/L	1		6010C	Total/NA
Chloride	35.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	33.4		4.0		mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Client Sample ID: U-4S (Continued)

## Lab Sample ID: 480-113905-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	404		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-113905-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.8		0.50		mg/L	1		6010C	Total/NA
Chloride	39.5		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	415		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-113905-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	90.6		0.50		mg/L	1		6010C	Total/NA
Chloride	42.1		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.13		0.10		mg/L	2		300.0	Total/NA
Sulfate	24.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	423		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-113905-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Calcium	100		0.50		mg/L	1		6010C	Total/NA
Chloride	22.6		1.0		mg/L	2		300.0	Total/NA
Sulfate	30.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	414		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 480-113905-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.067		0.0020		mg/L	1		6010C	Total/NA
Calcium	82.5		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0078		0.0040		mg/L	1		6010C	Total/NA
Cobalt	1.4		0.30		ug/L	1		6020A	Total/NA
Chloride	17.3		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.10		0.10		mg/L	2		300.0	Total/NA
Sulfate	39.8		4.0		mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Client Sample ID: DUP-1 (Continued)

## Lab Sample ID: 480-113905-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	368		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-2

## Lab Sample ID: 480-113905-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.063		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	92.7		0.50		mg/L	1		6010C	Total/NA
Chloride	41.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	23.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	414		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

## Lab Sample ID: 480-113905-19

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 2

## Lab Sample ID: 480-113905-20

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	5.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-5S2**  
**Date Collected: 02/21/17 08:25**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.069		0.0020		mg/L		02/27/17 09:40	02/27/17 19:37	1
Boron	0.048		0.020		mg/L		02/27/17 09:40	02/27/17 19:37	1
Calcium	115		0.50		mg/L		02/27/17 09:40	02/27/17 19:37	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 19:37	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 19:37	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 19:37	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:09	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:09	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 14:01	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 18:09	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 18:09	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:09	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:09	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 18:09	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 12:55	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.1		1.0		mg/L			02/28/17 19:54	2
Fluoride	ND		0.10		mg/L			02/28/17 19:54	2
Sulfate	41.6		4.0		mg/L			02/28/17 19:54	2
Total Dissolved Solids	502		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1		SU			02/26/17 11:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-5D**  
**Date Collected: 02/21/17 09:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.055</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 19:54	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 19:54	1
<b>Calcium</b>	<b>85.4</b>		0.50		mg/L		02/27/17 09:40	02/27/17 19:54	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 19:54	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 19:54	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 19:54	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:15	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:15	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 14:06	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 18:15	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 18:15	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:15	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:15	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 18:15	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 12:58	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>29.0</b>		1.0		mg/L			02/28/17 20:02	2
Fluoride	ND		0.10		mg/L			02/28/17 20:02	2
<b>Sulfate</b>	<b>28.4</b>		4.0		mg/L			02/28/17 20:02	2
<b>Total Dissolved Solids</b>	<b>398</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			02/26/17 11:13	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-3S**  
**Date Collected: 02/21/17 09:30**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.048		0.0020		mg/L		02/27/17 09:40	02/27/17 19:57	1
Boron	0.054		0.020		mg/L		02/27/17 09:40	02/27/17 19:57	1
Calcium	99.5		0.50		mg/L		02/27/17 09:40	02/27/17 19:57	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 19:57	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 19:57	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 19:57	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:22	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:22	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 14:12	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 18:22	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 18:22	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:22	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:22	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 18:22	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:04	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	51.9		1.0		mg/L			02/28/17 20:59	2
Fluoride	ND		0.10		mg/L			02/28/17 20:59	2
Sulfate	35.4		4.0		mg/L			02/28/17 20:59	2
Total Dissolved Solids	461		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			02/26/17 11:15	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

**Client Sample ID: D-3D**  
**Date Collected: 02/21/17 10:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.051		0.0020		mg/L		02/27/17 09:40	02/27/17 20:00	1
Boron	0.023		0.020		mg/L		02/27/17 09:40	02/27/17 20:00	1
Calcium	96.8		0.50		mg/L		02/27/17 09:40	02/27/17 20:00	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:00	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:00	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:00	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:46	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:46	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 14:35	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 18:46	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 18:46	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:46	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 18:46	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 18:46	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:06	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	78.4		2.5		mg/L			02/28/17 21:07	5
Fluoride	ND		0.25		mg/L			02/28/17 21:07	5
Sulfate	75.8		10.0		mg/L			02/28/17 21:07	5
Total Dissolved Solids	421		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			02/26/17 11:18	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-1S**  
**Date Collected: 02/21/17 11:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		02/27/17 09:40	02/27/17 20:14	1
Boron	0.035		0.020		mg/L		02/27/17 09:40	02/27/17 20:14	1
Calcium	99.5		0.50		mg/L		02/27/17 09:40	02/27/17 20:14	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:14	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:14	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:14	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:18	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:18	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:02	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 19:18	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 19:18	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:18	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:18	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 19:18	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.4		1.0		mg/L			02/28/17 21:15	2
Fluoride	ND		0.10		mg/L			02/28/17 21:15	2
Sulfate	28.1		4.0		mg/L			02/28/17 21:15	2
Total Dissolved Solids	430		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1		SU			02/26/17 11:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-1D**  
**Date Collected: 02/21/17 11:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:18	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:18	1
<b>Calcium</b>	<b>89.9</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:18	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:18	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:18	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:18	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:25	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:25	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:08	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 19:25	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 19:25	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:25	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:25	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 19:25	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:13	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>39.8</b>		1.0		mg/L			02/28/17 21:23	2
Fluoride	ND		0.10		mg/L			02/28/17 21:23	2
<b>Sulfate</b>	<b>28.2</b>		4.0		mg/L			02/28/17 21:23	2
<b>Total Dissolved Solids</b>	<b>409</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			02/26/17 11:27	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-2S**  
**Date Collected: 02/21/17 13:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-7**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		02/27/17 09:40	02/27/17 20:21	1
Boron	0.021		0.020		mg/L		02/27/17 09:40	02/27/17 20:21	1
Calcium	102		0.50		mg/L		02/27/17 09:40	02/27/17 20:21	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:21	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:21	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:21	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:31	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:31	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:13	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 19:31	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 19:31	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:31	1
Selenium	1.3		1.0		ug/L		02/28/17 09:23	02/28/17 19:31	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 19:31	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:15	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.7		1.0		mg/L			02/28/17 21:31	2
Fluoride	ND		0.10		mg/L			02/28/17 21:31	2
Sulfate	27.3		4.0		mg/L			02/28/17 21:31	2
Total Dissolved Solids	442		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			02/26/17 11:29	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-2D**  
**Date Collected: 02/21/17 13:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-8**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.049</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:24	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:24	1
<b>Calcium</b>	<b>85.1</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:24	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:24	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:24	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:38	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:38	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:19	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 19:38	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 19:38	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:38	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:38	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 19:38	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:17	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>32.6</b>		1.0		mg/L			02/28/17 21:39	2
Fluoride	ND		0.10		mg/L			02/28/17 21:39	2
<b>Sulfate</b>	<b>23.9</b>		4.0		mg/L			02/28/17 21:39	2
<b>Total Dissolved Solids</b>	<b>398</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			02/26/17 11:32	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-4S**  
**Date Collected: 02/21/17 14:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.068</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:28	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:28	1
<b>Calcium</b>	<b>95.8</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:28	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:28	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:28	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:28	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:44	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:44	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:24	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 19:44	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 19:44	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:44	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 19:44	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 19:44	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:19	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43.0</b>		1.0		mg/L			02/28/17 22:28	2
Fluoride	ND		0.10		mg/L			02/28/17 22:28	2
<b>Sulfate</b>	<b>29.0</b>		4.0		mg/L			02/28/17 22:28	2
<b>Total Dissolved Solids</b>	<b>438</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			02/26/17 11:35	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-4D**  
**Date Collected: 02/21/17 14:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.061</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:31	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:31	1
<b>Calcium</b>	<b>91.9</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:31	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:31	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:31	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:31	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:08	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:08	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:47	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:08	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 20:08	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:08	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:08	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:21	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>42.1</b>		1.0		mg/L			02/28/17 22:36	2
Fluoride	ND		0.10		mg/L			02/28/17 22:36	2
<b>Sulfate</b>	<b>26.6</b>		4.0		mg/L			02/28/17 22:36	2
<b>Total Dissolved Solids</b>	<b>430</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			02/26/17 11:38	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-8**  
**Date Collected: 02/22/17 08:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.064</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:35	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:35	1
<b>Calcium</b>	<b>80.9</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:35	1
<b>Chromium</b>	<b>0.0049</b>		0.0040		mg/L		02/27/17 09:40	02/27/17 20:35	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:35	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:35	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:15	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:15	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:53	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:15	1
<b>Cobalt</b>	<b>1.1</b>		0.30		ug/L		02/28/17 09:23	02/28/17 20:15	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:15	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:15	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:15	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:23	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>17.1</b>		1.0		mg/L			02/28/17 22:44	2
Fluoride	ND		0.10		mg/L			02/28/17 22:44	2
<b>Sulfate</b>	<b>40.0</b>		4.0		mg/L			02/28/17 22:44	2
<b>Total Dissolved Solids</b>	<b>387</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			02/26/17 11:41	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-9**  
**Date Collected: 02/22/17 09:20**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-12**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.062		0.0020		mg/L		02/27/17 09:40	02/27/17 20:38	1
Boron	0.020		0.020		mg/L		02/27/17 09:40	02/27/17 20:38	1
Calcium	103		0.50		mg/L		02/27/17 09:40	02/27/17 20:38	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:38	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:38	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:38	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:21	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:21	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 15:58	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:21	1
Cobalt	0.74		0.30		ug/L		02/28/17 09:23	02/28/17 20:21	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:21	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:21	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:21	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:25	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.2		1.0		mg/L			02/28/17 22:53	2
Fluoride	ND		0.10		mg/L			02/28/17 22:53	2
Sulfate	28.2		4.0		mg/L			02/28/17 22:53	2
Total Dissolved Solids	441		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			02/26/17 11:44	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: U-4S**  
**Date Collected: 02/22/17 11:30**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-13**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.039</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:41	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:41	1
<b>Calcium</b>	<b>90.3</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:41	1
<b>Chromium</b>	<b>0.021</b>		0.0040		mg/L		02/27/17 09:40	02/27/17 20:41	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:41	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:41	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:28	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:28	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:04	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:28	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 20:28	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:28	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:28	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:28	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:26	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>35.0</b>		1.0		mg/L			02/28/17 23:01	2
Fluoride	ND		0.10		mg/L			02/28/17 23:01	2
<b>Sulfate</b>	<b>33.4</b>		4.0		mg/L			02/28/17 23:01	2
<b>Total Dissolved Solids</b>	<b>404</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			02/26/17 11:46	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: U-4D**  
**Date Collected: 02/22/17 12:20**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 20:55	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 20:55	1
<b>Calcium</b>	<b>91.8</b>		0.50		mg/L		02/27/17 09:40	02/27/17 20:55	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:55	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:55	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:55	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:34	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:34	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:09	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:34	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 20:34	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:34	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:34	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:34	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:28	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>39.5</b>		1.0		mg/L			02/28/17 23:09	2
Fluoride	ND		0.10		mg/L			02/28/17 23:09	2
<b>Sulfate</b>	<b>28.1</b>		4.0		mg/L			02/28/17 23:09	2
<b>Total Dissolved Solids</b>	<b>415</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			02/26/17 11:55	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

**Client Sample ID: U-5S**  
**Date Collected: 02/22/17 12:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-15**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.062		0.0020		mg/L		02/27/17 09:40	02/27/17 20:58	1
Boron	0.022		0.020		mg/L		02/27/17 09:40	02/27/17 20:58	1
Calcium	90.6		0.50		mg/L		02/27/17 09:40	02/27/17 20:58	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 20:58	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 20:58	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 20:58	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:41	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:41	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:15	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:41	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 20:41	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:41	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:41	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:41	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:30	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.1		1.0		mg/L			02/28/17 23:17	2
Fluoride	0.13		0.10		mg/L			02/28/17 23:17	2
Sulfate	24.3		4.0		mg/L			02/28/17 23:17	2
Total Dissolved Solids	423		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			02/26/17 11:58	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: U-5D**  
**Date Collected: 02/22/17 13:50**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-16**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.053</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 21:02	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 21:02	1
<b>Calcium</b>	<b>100</b>		0.50		mg/L		02/27/17 09:40	02/27/17 21:02	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 21:02	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 21:02	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 21:02	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:48	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:48	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:20	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:48	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 20:48	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:48	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:48	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:48	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:35	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>22.6</b>		1.0		mg/L			02/28/17 23:25	2
Fluoride	ND		0.10		mg/L			02/28/17 23:25	2
<b>Sulfate</b>	<b>30.1</b>		4.0		mg/L			02/28/17 23:25	2
<b>Total Dissolved Solids</b>	<b>414</b>		10.0		mg/L			02/27/17 10:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			02/26/17 12:00	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: DUP-1**  
**Date Collected: 02/22/17 00:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-17**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.067</b>		0.0020		mg/L		02/27/17 09:40	02/27/17 21:05	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 21:05	1
<b>Calcium</b>	<b>82.5</b>		0.50		mg/L		02/27/17 09:40	02/27/17 21:05	1
<b>Chromium</b>	<b>0.0078</b>		0.0040		mg/L		02/27/17 09:40	02/27/17 21:05	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 21:05	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 21:05	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:54	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:54	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:26	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 20:54	1
<b>Cobalt</b>	<b>1.4</b>		0.30		ug/L		02/28/17 09:23	02/28/17 20:54	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:54	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 20:54	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 20:54	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>17.3</b>		1.0		mg/L			02/28/17 23:33	2
<b>Fluoride</b>	<b>0.10</b>		0.10		mg/L			02/28/17 23:33	2
<b>Sulfate</b>	<b>39.8</b>		4.0		mg/L			02/28/17 23:33	2
<b>Total Dissolved Solids</b>	<b>368</b>		10.0		mg/L			02/28/17 02:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			02/26/17 12:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: DUP-2**  
**Date Collected: 02/22/17 00:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-18**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.063		0.0020		mg/L		02/27/17 09:40	02/27/17 21:09	1
Boron	0.022		0.020		mg/L		02/27/17 09:40	02/27/17 21:09	1
Calcium	92.7		0.50		mg/L		02/27/17 09:40	02/27/17 21:09	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 21:09	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 21:09	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 21:09	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:01	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:01	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 16:31	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 21:01	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 21:01	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:01	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:01	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 21:01	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:38	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.6		2.5		mg/L			03/01/17 16:32	5
Fluoride	ND		0.25		mg/L			03/01/17 16:32	5
Sulfate	23.5		10.0		mg/L			03/01/17 16:32	5
Total Dissolved Solids	414		10.0		mg/L			02/28/17 02:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1		SU			02/26/17 12:06	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-113905-19**

**Date Collected: 02/22/17 00:00**

**Matrix: Water**

**Date Received: 02/24/17 09:30**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		02/27/17 09:40	02/27/17 23:56	1
Boron	ND	^	0.020		mg/L		02/27/17 09:40	02/27/17 23:56	1
Calcium	ND		0.50		mg/L		02/27/17 09:40	02/27/17 23:56	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 23:56	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 23:56	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 23:56	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:44	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:44	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 17:45	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 21:44	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 21:44	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:44	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:44	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 21:44	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			03/01/17 16:41	1
Fluoride	ND		0.050		mg/L			03/01/17 16:41	1
Sulfate	ND		2.0		mg/L			03/01/17 16:41	1
Total Dissolved Solids	ND		10.0		mg/L			02/28/17 02:25	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			02/26/17 12:09	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-113905-20**

**Date Collected: 02/22/17 00:00**

**Matrix: Water**

**Date Received: 02/24/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		02/27/17 09:40	02/27/17 23:53	1
Boron	ND	^	0.020		mg/L		02/27/17 09:40	02/27/17 23:53	1
Calcium	ND		0.50		mg/L		02/27/17 09:40	02/27/17 23:53	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 23:53	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 23:53	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 23:53	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:51	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:51	1
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 17:51	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 21:51	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 21:51	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:51	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:51	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 21:51	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			03/01/17 16:49	1
Fluoride	ND		0.050		mg/L			03/01/17 16:49	1
Sulfate	ND		2.0		mg/L			03/01/17 16:49	1
Total Dissolved Solids	ND		10.0		mg/L			02/28/17 02:25	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.8	HF	0.1		SU			02/26/17 12:12	1

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-345369/1-A**  
**Matrix: Water**  
**Analysis Batch: 345519**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345369**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		02/27/17 09:40	02/27/17 19:20	1
Boron	ND		0.020		mg/L		02/27/17 09:40	02/27/17 19:20	1
Calcium	ND		0.50		mg/L		02/27/17 09:40	02/27/17 19:20	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 19:20	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 19:20	1
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 19:20	1

**Lab Sample ID: LCS 480-345369/2-A**  
**Matrix: Water**  
**Analysis Batch: 345519**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345369**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.202		mg/L		101	80 - 120
Boron	0.200	0.200		mg/L		100	80 - 120
Calcium	10.0	9.85		mg/L		99	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Lead	0.200	0.204		mg/L		102	80 - 120

**Lab Sample ID: 480-113905-1 MS**  
**Matrix: Water**  
**Analysis Batch: 345519**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**  
**Prep Batch: 345369**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.069		0.200	0.275		mg/L		103	75 - 125
Boron	0.048		0.200	0.256		mg/L		104	75 - 125
Calcium	115		10.0	126.9	4	mg/L		122	75 - 125
Chromium	ND		0.200	0.203		mg/L		101	75 - 125
Lead	ND		0.200	0.212		mg/L		106	75 - 125

**Lab Sample ID: 480-113905-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 345519**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**  
**Prep Batch: 345369**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.069		0.200	0.276		mg/L		104	75 - 125	0	20
Boron	0.048		0.200	0.255		mg/L		104	75 - 125	0	20
Calcium	115		10.0	127.2	4	mg/L		125	75 - 125	0	20
Chromium	ND		0.200	0.206		mg/L		102	75 - 125	1	20
Lead	ND		0.200	0.213		mg/L		107	75 - 125	1	20

**Lab Sample ID: MB 480-345381/1-A**  
**Matrix: Water**  
**Analysis Batch: 345528**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345381**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		02/27/17 09:40	02/27/17 23:46	1
Calcium	ND		0.50		mg/L		02/27/17 09:40	02/27/17 23:46	1
Chromium	ND		0.0040		mg/L		02/27/17 09:40	02/27/17 23:46	1
Lead	ND		0.010		mg/L		02/27/17 09:40	02/27/17 23:46	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-345381/1-A**  
**Matrix: Water**  
**Analysis Batch: 345528**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345381**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.030		mg/L		02/27/17 09:40	02/27/17 23:46	1

**Lab Sample ID: MB 480-345381/1-A**  
**Matrix: Water**  
**Analysis Batch: 345618**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345381**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020		mg/L		02/27/17 09:40	02/28/17 12:14	1

**Lab Sample ID: LCS 480-345381/2-A**  
**Matrix: Water**  
**Analysis Batch: 345528**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345381**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.205		mg/L		102	80 - 120
Calcium	10.0	9.47		mg/L		95	80 - 120
Chromium	0.200	0.205		mg/L		103	80 - 120
Lead	0.200	0.204		mg/L		102	80 - 120

**Lab Sample ID: LCS 480-345381/2-A**  
**Matrix: Water**  
**Analysis Batch: 345618**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345381**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.200	0.202		mg/L		101	80 - 120

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-345513/1-A**  
**Matrix: Water**  
**Analysis Batch: 345732**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 17:56	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 17:56	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 17:56	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 17:56	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 17:56	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 17:56	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 17:56	1

**Lab Sample ID: MB 480-345513/1-A**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 13:50	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 480-345513/2-A**  
**Matrix: Water**  
**Analysis Batch: 345732**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.98		ug/L		100	80 - 120
Arsenic	20.0	19.80		ug/L		99	80 - 120
Cadmium	20.0	20.47		ug/L		102	80 - 120
Cobalt	20.0	21.29		ug/L		106	80 - 120
Molybdenum	20.0	20.53		ug/L		103	80 - 120
Selenium	20.0	20.08		ug/L		100	80 - 120
Thallium	20.0	19.88		ug/L		99	80 - 120

**Lab Sample ID: LCS 480-345513/2-A**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	19.70		ug/L		98	80 - 120

**Lab Sample ID: 480-113905-4 MS**  
**Matrix: Water**  
**Analysis Batch: 345732**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	20.87		ug/L		104	75 - 125
Arsenic	ND		20.0	21.27		ug/L		106	75 - 125
Cadmium	ND		20.0	20.83		ug/L		104	75 - 125
Cobalt	ND		20.0	21.08		ug/L		105	75 - 125
Molybdenum	ND		20.0	21.08		ug/L		104	75 - 125
Selenium	ND		20.0	21.09		ug/L		102	75 - 125
Thallium	ND		20.0	20.87		ug/L		104	75 - 125

**Lab Sample ID: 480-113905-4 MS**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	ND		20.0	19.42		ug/L		97	75 - 125

**Lab Sample ID: 480-113905-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 345732**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	21.51		ug/L		108	75 - 125	3	20
Arsenic	ND		20.0	21.24		ug/L		106	75 - 125	0	20
Cadmium	ND		20.0	20.79		ug/L		104	75 - 125	0	20
Cobalt	ND		20.0	20.73		ug/L		103	75 - 125	2	20
Molybdenum	ND		20.0	21.58		ug/L		107	75 - 125	2	20
Selenium	ND		20.0	21.32		ug/L		104	75 - 125	1	20
Thallium	ND		20.0	21.17		ug/L		106	75 - 125	1	20

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-113905-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**  
**Prep Batch: 345513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	ND		20.0	19.37		ug/L		97	75 - 125	0	20

**Lab Sample ID: MB 480-345521/1-A**  
**Matrix: Water**  
**Analysis Batch: 345733**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345521**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:31	1
Arsenic	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:31	1
Cadmium	ND		0.50		ug/L		02/28/17 09:23	02/28/17 21:31	1
Cobalt	ND		0.30		ug/L		02/28/17 09:23	02/28/17 21:31	1
Molybdenum	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:31	1
Selenium	ND		1.0		ug/L		02/28/17 09:23	02/28/17 21:31	1
Thallium	ND		0.20		ug/L		02/28/17 09:23	02/28/17 21:31	1

**Lab Sample ID: MB 480-345521/1-A**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345521**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.70		ug/L		02/28/17 09:23	03/01/17 17:34	1

**Lab Sample ID: LCS 480-345521/2-A**  
**Matrix: Water**  
**Analysis Batch: 345733**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345521**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	20.60		ug/L		103	80 - 120
Arsenic	20.0	20.46		ug/L		102	80 - 120
Cadmium	20.0	20.55		ug/L		103	80 - 120
Cobalt	20.0	21.50		ug/L		107	80 - 120
Molybdenum	20.0	20.96		ug/L		105	80 - 120
Selenium	20.0	20.73		ug/L		104	80 - 120
Thallium	20.0	20.90		ug/L		105	80 - 120

**Lab Sample ID: LCS 480-345521/2-A**  
**Matrix: Water**  
**Analysis Batch: 345957**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345521**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	21.26		ug/L		106	80 - 120

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-345391/1-A**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345391**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 12:51	1

**Lab Sample ID: LCS 480-345391/2-A**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345391**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	7.18		ug/L		108	80 - 120

**Lab Sample ID: 480-113905-2 MS**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: D-5D**  
**Prep Type: Total/NA**  
**Prep Batch: 345391**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	7.22		ug/L		108	80 - 120

**Lab Sample ID: 480-113905-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: D-5D**  
**Prep Type: Total/NA**  
**Prep Batch: 345391**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	7.25		ug/L		109	80 - 120	0	20

**Lab Sample ID: MB 480-345393/1-A**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 345393**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/27/17 10:00	02/27/17 13:40	1

**Lab Sample ID: LCS 480-345393/2-A**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 345393**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	7.20		ug/L		108	80 - 120

**Lab Sample ID: 480-113905-19 MS**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 345393**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	7.03		ug/L		105	80 - 120

**Lab Sample ID: 480-113905-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 345441**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 345393**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	7.08		ug/L		106	80 - 120	1	20

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-345611/30**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			02/28/17 20:50	1
Fluoride	ND		0.050		mg/L			02/28/17 20:50	1
Sulfate	ND		2.0		mg/L			02/28/17 20:50	1

**Lab Sample ID: MB 480-345611/4**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			02/28/17 17:19	1
Fluoride	ND		0.050		mg/L			02/28/17 17:19	1
Sulfate	ND		2.0		mg/L			02/28/17 17:19	1

**Lab Sample ID: LCS 480-345611/29**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.26		mg/L		101	90 - 110
Fluoride	5.00	4.83		mg/L		97	90 - 110
Sulfate	50.0	48.65		mg/L		97	90 - 110

**Lab Sample ID: LCS 480-345611/3**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.16		mg/L		100	90 - 110
Fluoride	5.00	4.95		mg/L		99	90 - 110
Sulfate	50.0	49.12		mg/L		98	90 - 110

**Lab Sample ID: 480-113905-2 MS**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: D-5D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	29.0		100	133.8		mg/L		105	81 - 120
Fluoride	ND		10.0	10.29		mg/L		102	82 - 120
Sulfate	28.4		100	130.6		mg/L		102	80 - 120

**Lab Sample ID: 480-113905-8 MS**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	32.6		100	136.5		mg/L		104	81 - 120
Fluoride	ND		10.0	10.02		mg/L		99	82 - 120
Sulfate	23.9		100	125.8		mg/L		102	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-113905-8 MSD**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	32.6		100	137.2		mg/L		105	81 - 120	1	20
Fluoride	ND		10.0	10.16		mg/L		101	82 - 120	1	20
Sulfate	23.9		100	126.7		mg/L		103	80 - 120	1	20

**Lab Sample ID: 480-113905-17 MS**  
**Matrix: Water**  
**Analysis Batch: 345611**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	17.3		100	122.2		mg/L		105	81 - 120
Fluoride	0.10		10.0	10.28		mg/L		102	82 - 120
Sulfate	39.8		100	142.0		mg/L		102	80 - 120

**Lab Sample ID: MB 480-345801/4**  
**Matrix: Water**  
**Analysis Batch: 345801**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			03/01/17 16:24	1
Fluoride	ND		0.050		mg/L			03/01/17 16:24	1
Sulfate	ND		2.0		mg/L			03/01/17 16:24	1

**Lab Sample ID: LCS 480-345801/3**  
**Matrix: Water**  
**Analysis Batch: 345801**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.27		mg/L		101	90 - 110
Fluoride	5.00	4.85		mg/L		97	90 - 110
Sulfate	50.0	49.16		mg/L		98	90 - 110

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-345403/1**  
**Matrix: Water**  
**Analysis Batch: 345403**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			02/27/17 10:20	1

**Lab Sample ID: LCS 480-345403/2**  
**Matrix: Water**  
**Analysis Batch: 345403**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	506	508.0		mg/L		100	85 - 115

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: 480-113905-5 DU**  
**Matrix: Water**  
**Analysis Batch: 345403**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	430		435.0		mg/L		1	10

**Lab Sample ID: 480-113905-12 DU**  
**Matrix: Water**  
**Analysis Batch: 345403**

**Client Sample ID: D-9**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	441		446.0		mg/L		1	10

**Lab Sample ID: MB 480-345475/1**  
**Matrix: Water**  
**Analysis Batch: 345475**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			02/28/17 02:25	1

**Lab Sample ID: LCS 480-345475/2**  
**Matrix: Water**  
**Analysis Batch: 345475**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	506	492.0		mg/L		97	85 - 115

**Lab Sample ID: 480-113905-19 DU**  
**Matrix: Water**  
**Analysis Batch: 345475**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	ND		ND		mg/L		NC	10

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-345338/1**  
**Matrix: Water**  
**Analysis Batch: 345338**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-345338/23**  
**Matrix: Water**  
**Analysis Batch: 345338**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	99 - 101

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 480-113905-13 DU  
Matrix: Water  
Analysis Batch: 345338

Client Sample ID: U-4S  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	HF	7.4		SU		1	5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Metals

### Prep Batch: 345369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	3005A	
480-113905-2	D-5D	Total/NA	Water	3005A	
480-113905-3	D-3S	Total/NA	Water	3005A	
480-113905-4	D-3D	Total/NA	Water	3005A	
480-113905-5	D-1S	Total/NA	Water	3005A	
480-113905-6	D-1D	Total/NA	Water	3005A	
480-113905-7	D-2S	Total/NA	Water	3005A	
480-113905-8	D-2D	Total/NA	Water	3005A	
480-113905-9	D-4S	Total/NA	Water	3005A	
480-113905-10	D-4D	Total/NA	Water	3005A	
480-113905-11	D-8	Total/NA	Water	3005A	
480-113905-12	D-9	Total/NA	Water	3005A	
480-113905-13	U-4S	Total/NA	Water	3005A	
480-113905-14	U-4D	Total/NA	Water	3005A	
480-113905-15	U-5S	Total/NA	Water	3005A	
480-113905-16	U-5D	Total/NA	Water	3005A	
480-113905-17	DUP-1	Total/NA	Water	3005A	
480-113905-18	DUP-2	Total/NA	Water	3005A	
MB 480-345369/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-345369/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-113905-1 MS	D-5S2	Total/NA	Water	3005A	
480-113905-1 MSD	D-5S2	Total/NA	Water	3005A	

### Prep Batch: 345381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-19	FIELD BLANK 1	Total/NA	Water	3005A	
480-113905-20	FIELD BLANK 2	Total/NA	Water	3005A	
MB 480-345381/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-345381/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Prep Batch: 345391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	7470A	
480-113905-2	D-5D	Total/NA	Water	7470A	
480-113905-3	D-3S	Total/NA	Water	7470A	
480-113905-4	D-3D	Total/NA	Water	7470A	
480-113905-5	D-1S	Total/NA	Water	7470A	
480-113905-6	D-1D	Total/NA	Water	7470A	
480-113905-7	D-2S	Total/NA	Water	7470A	
480-113905-8	D-2D	Total/NA	Water	7470A	
480-113905-9	D-4S	Total/NA	Water	7470A	
480-113905-10	D-4D	Total/NA	Water	7470A	
480-113905-11	D-8	Total/NA	Water	7470A	
480-113905-12	D-9	Total/NA	Water	7470A	
480-113905-13	U-4S	Total/NA	Water	7470A	
480-113905-14	U-4D	Total/NA	Water	7470A	
480-113905-15	U-5S	Total/NA	Water	7470A	
480-113905-16	U-5D	Total/NA	Water	7470A	
480-113905-17	DUP-1	Total/NA	Water	7470A	
480-113905-18	DUP-2	Total/NA	Water	7470A	
MB 480-345391/1-A	Method Blank	Total/NA	Water	7470A	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Metals (Continued)

### Prep Batch: 345391 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-345391/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-113905-2 MS	D-5D	Total/NA	Water	7470A	
480-113905-2 MSD	D-5D	Total/NA	Water	7470A	

### Prep Batch: 345393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-19	FIELD BLANK 1	Total/NA	Water	7470A	
480-113905-20	FIELD BLANK 2	Total/NA	Water	7470A	
MB 480-345393/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-345393/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-113905-19 MS	FIELD BLANK 1	Total/NA	Water	7470A	
480-113905-19 MSD	FIELD BLANK 1	Total/NA	Water	7470A	

### Analysis Batch: 345441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	7470A	345391
480-113905-2	D-5D	Total/NA	Water	7470A	345391
480-113905-3	D-3S	Total/NA	Water	7470A	345391
480-113905-4	D-3D	Total/NA	Water	7470A	345391
480-113905-5	D-1S	Total/NA	Water	7470A	345391
480-113905-6	D-1D	Total/NA	Water	7470A	345391
480-113905-7	D-2S	Total/NA	Water	7470A	345391
480-113905-8	D-2D	Total/NA	Water	7470A	345391
480-113905-9	D-4S	Total/NA	Water	7470A	345391
480-113905-10	D-4D	Total/NA	Water	7470A	345391
480-113905-11	D-8	Total/NA	Water	7470A	345391
480-113905-12	D-9	Total/NA	Water	7470A	345391
480-113905-13	U-4S	Total/NA	Water	7470A	345391
480-113905-14	U-4D	Total/NA	Water	7470A	345391
480-113905-15	U-5S	Total/NA	Water	7470A	345391
480-113905-16	U-5D	Total/NA	Water	7470A	345391
480-113905-17	DUP-1	Total/NA	Water	7470A	345391
480-113905-18	DUP-2	Total/NA	Water	7470A	345391
480-113905-19	FIELD BLANK 1	Total/NA	Water	7470A	345393
480-113905-20	FIELD BLANK 2	Total/NA	Water	7470A	345393
MB 480-345391/1-A	Method Blank	Total/NA	Water	7470A	345391
MB 480-345393/1-A	Method Blank	Total/NA	Water	7470A	345393
LCS 480-345391/2-A	Lab Control Sample	Total/NA	Water	7470A	345391
LCS 480-345393/2-A	Lab Control Sample	Total/NA	Water	7470A	345393
480-113905-2 MS	D-5D	Total/NA	Water	7470A	345391
480-113905-2 MSD	D-5D	Total/NA	Water	7470A	345391
480-113905-19 MS	FIELD BLANK 1	Total/NA	Water	7470A	345393
480-113905-19 MSD	FIELD BLANK 1	Total/NA	Water	7470A	345393

### Prep Batch: 345513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	3020A	
480-113905-2	D-5D	Total/NA	Water	3020A	
480-113905-3	D-3S	Total/NA	Water	3020A	
480-113905-4	D-3D	Total/NA	Water	3020A	
480-113905-5	D-1S	Total/NA	Water	3020A	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Metals (Continued)

### Prep Batch: 345513 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-6	D-1D	Total/NA	Water	3020A	
480-113905-7	D-2S	Total/NA	Water	3020A	
480-113905-8	D-2D	Total/NA	Water	3020A	
480-113905-9	D-4S	Total/NA	Water	3020A	
480-113905-10	D-4D	Total/NA	Water	3020A	
480-113905-11	D-8	Total/NA	Water	3020A	
480-113905-12	D-9	Total/NA	Water	3020A	
480-113905-13	U-4S	Total/NA	Water	3020A	
480-113905-14	U-4D	Total/NA	Water	3020A	
480-113905-15	U-5S	Total/NA	Water	3020A	
480-113905-16	U-5D	Total/NA	Water	3020A	
480-113905-17	DUP-1	Total/NA	Water	3020A	
480-113905-18	DUP-2	Total/NA	Water	3020A	
MB 480-345513/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-345513/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-113905-4 MS	D-3D	Total/NA	Water	3020A	
480-113905-4 MSD	D-3D	Total/NA	Water	3020A	

### Analysis Batch: 345519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	6010C	345369
480-113905-2	D-5D	Total/NA	Water	6010C	345369
480-113905-3	D-3S	Total/NA	Water	6010C	345369
480-113905-4	D-3D	Total/NA	Water	6010C	345369
480-113905-5	D-1S	Total/NA	Water	6010C	345369
480-113905-6	D-1D	Total/NA	Water	6010C	345369
480-113905-7	D-2S	Total/NA	Water	6010C	345369
480-113905-8	D-2D	Total/NA	Water	6010C	345369
480-113905-9	D-4S	Total/NA	Water	6010C	345369
480-113905-10	D-4D	Total/NA	Water	6010C	345369
480-113905-11	D-8	Total/NA	Water	6010C	345369
480-113905-12	D-9	Total/NA	Water	6010C	345369
480-113905-13	U-4S	Total/NA	Water	6010C	345369
480-113905-14	U-4D	Total/NA	Water	6010C	345369
480-113905-15	U-5S	Total/NA	Water	6010C	345369
480-113905-16	U-5D	Total/NA	Water	6010C	345369
480-113905-17	DUP-1	Total/NA	Water	6010C	345369
480-113905-18	DUP-2	Total/NA	Water	6010C	345369
MB 480-345369/1-A	Method Blank	Total/NA	Water	6010C	345369
LCS 480-345369/2-A	Lab Control Sample	Total/NA	Water	6010C	345369
480-113905-1 MS	D-5S2	Total/NA	Water	6010C	345369
480-113905-1 MSD	D-5S2	Total/NA	Water	6010C	345369

### Prep Batch: 345521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-19	FIELD BLANK 1	Total/NA	Water	3020A	
480-113905-20	FIELD BLANK 2	Total/NA	Water	3020A	
MB 480-345521/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-345521/2-A	Lab Control Sample	Total/NA	Water	3020A	

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

## Metals (Continued)

### Analysis Batch: 345528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-19	FIELD BLANK 1	Total/NA	Water	6010C	345381
480-113905-20	FIELD BLANK 2	Total/NA	Water	6010C	345381
MB 480-345381/1-A	Method Blank	Total/NA	Water	6010C	345381
LCS 480-345381/2-A	Lab Control Sample	Total/NA	Water	6010C	345381

### Analysis Batch: 345618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-345381/1-A	Method Blank	Total/NA	Water	6010C	345381
LCS 480-345381/2-A	Lab Control Sample	Total/NA	Water	6010C	345381

### Analysis Batch: 345732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	6020A	345513
480-113905-2	D-5D	Total/NA	Water	6020A	345513
480-113905-3	D-3S	Total/NA	Water	6020A	345513
480-113905-4	D-3D	Total/NA	Water	6020A	345513
480-113905-5	D-1S	Total/NA	Water	6020A	345513
480-113905-6	D-1D	Total/NA	Water	6020A	345513
480-113905-7	D-2S	Total/NA	Water	6020A	345513
480-113905-8	D-2D	Total/NA	Water	6020A	345513
480-113905-9	D-4S	Total/NA	Water	6020A	345513
480-113905-10	D-4D	Total/NA	Water	6020A	345513
480-113905-11	D-8	Total/NA	Water	6020A	345513
480-113905-12	D-9	Total/NA	Water	6020A	345513
480-113905-13	U-4S	Total/NA	Water	6020A	345513
480-113905-14	U-4D	Total/NA	Water	6020A	345513
480-113905-15	U-5S	Total/NA	Water	6020A	345513
480-113905-16	U-5D	Total/NA	Water	6020A	345513
480-113905-17	DUP-1	Total/NA	Water	6020A	345513
480-113905-18	DUP-2	Total/NA	Water	6020A	345513
MB 480-345513/1-A	Method Blank	Total/NA	Water	6020A	345513
LCS 480-345513/2-A	Lab Control Sample	Total/NA	Water	6020A	345513
480-113905-4 MS	D-3D	Total/NA	Water	6020A	345513
480-113905-4 MSD	D-3D	Total/NA	Water	6020A	345513

### Analysis Batch: 345733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-19	FIELD BLANK 1	Total/NA	Water	6020A	345521
480-113905-20	FIELD BLANK 2	Total/NA	Water	6020A	345521
MB 480-345521/1-A	Method Blank	Total/NA	Water	6020A	345521
LCS 480-345521/2-A	Lab Control Sample	Total/NA	Water	6020A	345521

### Analysis Batch: 345957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	6020A	345513
480-113905-2	D-5D	Total/NA	Water	6020A	345513
480-113905-3	D-3S	Total/NA	Water	6020A	345513
480-113905-4	D-3D	Total/NA	Water	6020A	345513
480-113905-5	D-1S	Total/NA	Water	6020A	345513
480-113905-6	D-1D	Total/NA	Water	6020A	345513
480-113905-7	D-2S	Total/NA	Water	6020A	345513

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Metals (Continued)

### Analysis Batch: 345957 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-8	D-2D	Total/NA	Water	6020A	345513
480-113905-9	D-4S	Total/NA	Water	6020A	345513
480-113905-10	D-4D	Total/NA	Water	6020A	345513
480-113905-11	D-8	Total/NA	Water	6020A	345513
480-113905-12	D-9	Total/NA	Water	6020A	345513
480-113905-13	U-4S	Total/NA	Water	6020A	345513
480-113905-14	U-4D	Total/NA	Water	6020A	345513
480-113905-15	U-5S	Total/NA	Water	6020A	345513
480-113905-16	U-5D	Total/NA	Water	6020A	345513
480-113905-17	DUP-1	Total/NA	Water	6020A	345513
480-113905-18	DUP-2	Total/NA	Water	6020A	345513
480-113905-19	FIELD BLANK 1	Total/NA	Water	6020A	345521
480-113905-20	FIELD BLANK 2	Total/NA	Water	6020A	345521
MB 480-345513/1-A	Method Blank	Total/NA	Water	6020A	345513
MB 480-345521/1-A	Method Blank	Total/NA	Water	6020A	345521
LCS 480-345513/2-A	Lab Control Sample	Total/NA	Water	6020A	345513
LCS 480-345521/2-A	Lab Control Sample	Total/NA	Water	6020A	345521
480-113905-4 MS	D-3D	Total/NA	Water	6020A	345513
480-113905-4 MSD	D-3D	Total/NA	Water	6020A	345513

## General Chemistry

### Analysis Batch: 345338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-113905-2	D-5D	Total/NA	Water	SM 4500 H+ B	
480-113905-3	D-3S	Total/NA	Water	SM 4500 H+ B	
480-113905-4	D-3D	Total/NA	Water	SM 4500 H+ B	
480-113905-5	D-1S	Total/NA	Water	SM 4500 H+ B	
480-113905-6	D-1D	Total/NA	Water	SM 4500 H+ B	
480-113905-7	D-2S	Total/NA	Water	SM 4500 H+ B	
480-113905-8	D-2D	Total/NA	Water	SM 4500 H+ B	
480-113905-9	D-4S	Total/NA	Water	SM 4500 H+ B	
480-113905-10	D-4D	Total/NA	Water	SM 4500 H+ B	
480-113905-11	D-8	Total/NA	Water	SM 4500 H+ B	
480-113905-12	D-9	Total/NA	Water	SM 4500 H+ B	
480-113905-13	U-4S	Total/NA	Water	SM 4500 H+ B	
480-113905-14	U-4D	Total/NA	Water	SM 4500 H+ B	
480-113905-15	U-5S	Total/NA	Water	SM 4500 H+ B	
480-113905-16	U-5D	Total/NA	Water	SM 4500 H+ B	
480-113905-17	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-113905-18	DUP-2	Total/NA	Water	SM 4500 H+ B	
480-113905-19	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
480-113905-20	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	
LCS 480-345338/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-345338/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-113905-13 DU	U-4S	Total/NA	Water	SM 4500 H+ B	



# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## General Chemistry (Continued)

### Analysis Batch: 345403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	SM 2540C	
480-113905-2	D-5D	Total/NA	Water	SM 2540C	
480-113905-3	D-3S	Total/NA	Water	SM 2540C	
480-113905-4	D-3D	Total/NA	Water	SM 2540C	
480-113905-5	D-1S	Total/NA	Water	SM 2540C	
480-113905-6	D-1D	Total/NA	Water	SM 2540C	
480-113905-7	D-2S	Total/NA	Water	SM 2540C	
480-113905-8	D-2D	Total/NA	Water	SM 2540C	
480-113905-9	D-4S	Total/NA	Water	SM 2540C	
480-113905-10	D-4D	Total/NA	Water	SM 2540C	
480-113905-11	D-8	Total/NA	Water	SM 2540C	
480-113905-12	D-9	Total/NA	Water	SM 2540C	
480-113905-13	U-4S	Total/NA	Water	SM 2540C	
480-113905-14	U-4D	Total/NA	Water	SM 2540C	
480-113905-15	U-5S	Total/NA	Water	SM 2540C	
480-113905-16	U-5D	Total/NA	Water	SM 2540C	
MB 480-345403/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-345403/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-113905-5 DU	D-1S	Total/NA	Water	SM 2540C	
480-113905-12 DU	D-9	Total/NA	Water	SM 2540C	

### Analysis Batch: 345475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-17	DUP-1	Total/NA	Water	SM 2540C	
480-113905-18	DUP-2	Total/NA	Water	SM 2540C	
480-113905-19	FIELD BLANK 1	Total/NA	Water	SM 2540C	
480-113905-20	FIELD BLANK 2	Total/NA	Water	SM 2540C	
MB 480-345475/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-345475/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-113905-19 DU	FIELD BLANK 1	Total/NA	Water	SM 2540C	

### Analysis Batch: 345611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	300.0	
480-113905-2	D-5D	Total/NA	Water	300.0	
480-113905-3	D-3S	Total/NA	Water	300.0	
480-113905-4	D-3D	Total/NA	Water	300.0	
480-113905-5	D-1S	Total/NA	Water	300.0	
480-113905-6	D-1D	Total/NA	Water	300.0	
480-113905-7	D-2S	Total/NA	Water	300.0	
480-113905-8	D-2D	Total/NA	Water	300.0	
480-113905-9	D-4S	Total/NA	Water	300.0	
480-113905-10	D-4D	Total/NA	Water	300.0	
480-113905-11	D-8	Total/NA	Water	300.0	
480-113905-12	D-9	Total/NA	Water	300.0	
480-113905-13	U-4S	Total/NA	Water	300.0	
480-113905-14	U-4D	Total/NA	Water	300.0	
480-113905-15	U-5S	Total/NA	Water	300.0	
480-113905-16	U-5D	Total/NA	Water	300.0	
480-113905-17	DUP-1	Total/NA	Water	300.0	
MB 480-345611/30	Method Blank	Total/NA	Water	300.0	

TestAmerica Buffalo



# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## General Chemistry (Continued)

### Analysis Batch: 345611 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-345611/4	Method Blank	Total/NA	Water	300.0	
LCS 480-345611/29	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-345611/3	Lab Control Sample	Total/NA	Water	300.0	
480-113905-2 MS	D-5D	Total/NA	Water	300.0	
480-113905-8 MS	D-2D	Total/NA	Water	300.0	
480-113905-8 MSD	D-2D	Total/NA	Water	300.0	
480-113905-17 MS	DUP-1	Total/NA	Water	300.0	

### Analysis Batch: 345801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-18	DUP-2	Total/NA	Water	300.0	
480-113905-19	FIELD BLANK 1	Total/NA	Water	300.0	
480-113905-20	FIELD BLANK 2	Total/NA	Water	300.0	
MB 480-345801/4	Method Blank	Total/NA	Water	300.0	
LCS 480-345801/3	Lab Control Sample	Total/NA	Water	300.0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

**Client Sample ID: D-5S2**  
**Date Collected: 02/21/17 08:25**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 19:37	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 18:09	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 14:01	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 12:55	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 19:54	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:10	CEA	TAL BUF

**Client Sample ID: D-5D**  
**Date Collected: 02/21/17 09:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 19:54	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 18:15	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 14:06	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 12:58	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 20:02	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:13	CEA	TAL BUF

**Client Sample ID: D-3S**  
**Date Collected: 02/21/17 09:30**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 19:57	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 18:22	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 14:12	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:04	RMZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Client Sample ID: D-3S

Date Collected: 02/21/17 09:30

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	345611	02/28/17 20:59	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:15	CEA	TAL BUF

## Client Sample ID: D-3D

Date Collected: 02/21/17 10:10

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:00	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 18:46	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 14:35	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:06	RMZ	TAL BUF
Total/NA	Analysis	300.0		5	345611	02/28/17 21:07	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:18	CEA	TAL BUF

## Client Sample ID: D-1S

Date Collected: 02/21/17 11:10

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:14	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 19:18	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:02	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:08	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 21:15	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:24	CEA	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

**Client Sample ID: D-1D**  
**Date Collected: 02/21/17 11:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:18	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 19:25	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:08	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:13	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 21:23	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:27	CEA	TAL BUF

**Client Sample ID: D-2S**  
**Date Collected: 02/21/17 13:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:21	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 19:31	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:13	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:15	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 21:31	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:29	CEA	TAL BUF

**Client Sample ID: D-2D**  
**Date Collected: 02/21/17 13:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-8**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:24	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 19:38	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:19	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:17	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 21:39	DMR	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
 SDG: 113905

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:32	CEA	TAL BUF

## Client Sample ID: D-4S

Lab Sample ID: 480-113905-9

Date Collected: 02/21/17 14:10

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:28	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 19:44	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:24	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:19	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 22:28	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:35	CEA	TAL BUF

## Client Sample ID: D-4D

Lab Sample ID: 480-113905-10

Date Collected: 02/21/17 14:40

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:31	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:08	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:47	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:21	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 22:36	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:38	CEA	TAL BUF

## Client Sample ID: D-8

Lab Sample ID: 480-113905-11

Date Collected: 02/22/17 08:40

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:35	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:15	MTM2	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Client Sample ID: D-8

Date Collected: 02/22/17 08:40  
Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:53	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:23	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 22:44	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:41	CEA	TAL BUF

## Client Sample ID: D-9

Date Collected: 02/22/17 09:20  
Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:38	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:21	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 15:58	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:25	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 22:53	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:44	CEA	TAL BUF

## Client Sample ID: U-4S

Date Collected: 02/22/17 11:30  
Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:41	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:28	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:04	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:26	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 23:01	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:46	CEA	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

**Client Sample ID: U-4D**  
**Date Collected: 02/22/17 12:20**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-14**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:55	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:34	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:09	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:28	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 23:09	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:55	CEA	TAL BUF

**Client Sample ID: U-5S**  
**Date Collected: 02/22/17 12:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-15**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 20:58	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:41	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:15	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:30	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 23:17	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 11:58	CEA	TAL BUF

**Client Sample ID: U-5D**  
**Date Collected: 02/22/17 13:50**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-16**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 21:02	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:48	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:20	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:35	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 23:25	DMR	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	345403	02/27/17 10:20	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 12:00	CEA	TAL BUF

## Client Sample ID: DUP-1

Lab Sample ID: 480-113905-17

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 21:05	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 20:54	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:26	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:37	RMZ	TAL BUF
Total/NA	Analysis	300.0		2	345611	02/28/17 23:33	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345475	02/28/17 02:25	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 12:03	CEA	TAL BUF

## Client Sample ID: DUP-2

Lab Sample ID: 480-113905-18

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345369	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345519	02/27/17 21:09	SLB	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345732	02/28/17 21:01	MTM2	TAL BUF
Total/NA	Prep	3020A			345513	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 16:31	MTM2	TAL BUF
Total/NA	Prep	7470A			345391	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:38	RMZ	TAL BUF
Total/NA	Analysis	300.0		5	345801	03/01/17 16:32	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345475	02/28/17 02:25	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 12:06	CEA	TAL BUF

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-113905-19

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345381	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345528	02/27/17 23:56	SLB	TAL BUF
Total/NA	Prep	3020A			345521	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345733	02/28/17 21:44	MTM2	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-113905-19

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			345521	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 17:45	MTM2	TAL BUF
Total/NA	Prep	7470A			345393	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:44	RMZ	TAL BUF
Total/NA	Analysis	300.0		1	345801	03/01/17 16:41	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345475	02/28/17 02:25	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 12:09	CEA	TAL BUF

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-113905-20

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			345381	02/27/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	345528	02/27/17 23:53	SLB	TAL BUF
Total/NA	Prep	3020A			345521	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345733	02/28/17 21:51	MTM2	TAL BUF
Total/NA	Prep	3020A			345521	02/28/17 09:23	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	345957	03/01/17 17:51	MTM2	TAL BUF
Total/NA	Prep	7470A			345393	02/27/17 10:00	RMZ	TAL BUF
Total/NA	Analysis	7470A		1	345441	02/27/17 13:51	RMZ	TAL BUF
Total/NA	Analysis	300.0		1	345801	03/01/17 16:49	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	345475	02/28/17 02:25	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	345338	02/26/17 12:12	CEA	TAL BUF

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-1  
SDG: 113905

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-113905-1	D-5S2	Water	02/21/17 08:25	02/24/17 09:30
480-113905-2	D-5D	Water	02/21/17 09:00	02/24/17 09:30
480-113905-3	D-3S	Water	02/21/17 09:30	02/24/17 09:30
480-113905-4	D-3D	Water	02/21/17 10:10	02/24/17 09:30
480-113905-5	D-1S	Water	02/21/17 11:10	02/24/17 09:30
480-113905-6	D-1D	Water	02/21/17 11:55	02/24/17 09:30
480-113905-7	D-2S	Water	02/21/17 13:00	02/24/17 09:30
480-113905-8	D-2D	Water	02/21/17 13:40	02/24/17 09:30
480-113905-9	D-4S	Water	02/21/17 14:10	02/24/17 09:30
480-113905-10	D-4D	Water	02/21/17 14:40	02/24/17 09:30
480-113905-11	D-8	Water	02/22/17 08:40	02/24/17 09:30
480-113905-12	D-9	Water	02/22/17 09:20	02/24/17 09:30
480-113905-13	U-4S	Water	02/22/17 11:30	02/24/17 09:30
480-113905-14	U-4D	Water	02/22/17 12:20	02/24/17 09:30
480-113905-15	U-5S	Water	02/22/17 12:55	02/24/17 09:30
480-113905-16	U-5D	Water	02/22/17 13:50	02/24/17 09:30
480-113905-17	DUP-1	Water	02/22/17 00:00	02/24/17 09:30
480-113905-18	DUP-2	Water	02/22/17 00:00	02/24/17 09:30
480-113905-19	FIELD BLANK 1	Water	02/22/17 00:00	02/24/17 09:30
480-113905-20	FIELD BLANK 2	Water	02/22/17 00:00	02/24/17 09:30

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact: SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 COR GW Event 1  
Site: P O # 3063-17-00267

Project Manager: Ryan Van Dette  
Tel/fax: \_\_\_\_\_

Site Contact: Nathaniel Beineman Date: 2/21/17  
Lab Contact: \_\_\_\_\_ Carrier: \_\_\_\_\_

COC No: 460-113905 COC  
Sampler: \_\_\_\_\_  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:											
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS			
D-552	2/21/17	8:25	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-5D	2/21/17	9:00	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-35	2/21/17	9:30	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-3D	2/21/17	10:10	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-15	2/21/17	11:10	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-1D	2/21/17	11:55	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-25	2/21/17	12:00	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-2D	2/21/17	13:40	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-45	2/21/17	14:10	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-4D	2/21/17	14:40	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-8	2/22/17	8:40	Grab	Water	5	N		X	X	X	X	X	X	X	X		
D-9	2/22/17	9:20	Grab	Water	5	N		X	X	X	X	X	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Flammable  Non-Hazard  Skin Irritant  Poison B  Unknown  Return to Client  Disposal by Lab  Archive for Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seal No.: \_\_\_\_\_  
Company: GES  
Date/Time: 2/23/17 12:00

Relinquished by: *Anna & Reb*  
Company: TESTAMERICA  
Date/Time: 2-23-17 12:00

Received by: *Anna & Reb*  
Company: TESTAMERICA  
Date/Time: 2/24/17 0930

Relinquished by: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

Received in Laboratory by: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

Therm ID No.: \_\_\_\_\_  
Cooler Temp. (°C): Obs'd: \_\_\_\_\_ Corrd: \_\_\_\_\_

Company: TESTAMERICA  
Date/Time: 2-23-17 15:15

Company: TESTAMERICA  
Date/Time: 2/24/17 0930



Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 1  
Site:  
P O # 3063-17-00267

**Project Manager:** Ryan Van Dette  
**Tel/Fax:**

**Analysis Turnaround Time**  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact:** Nathaniel Beineman  
**Date:** 2/22/17  
**Carrier:**

**COC No.:** 1 of 2 COCs

**Sampler:**  
**For Lab Use Only:**  
**Walk-in Client:**  
**Lab Sampling:**  
**Job / SDG No.:**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:									
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
V-45	2/22/17	11:30	Grab	Water	5	N	X	X	X	X	X	X	X	X	
V-4D	2/22/17	12:20	Grab	Water	5	N	X	X	X	X	X	X	X	X	
V-55	2/22/17	12:55	Grab	Water	5	N	X	X	X	X	X	X	X	X	
V-5D	2/22/17	13:50	Grab	Water	5	N	X	X	X	X	X	X	X	X	
DUP-1	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X	
DUP-2	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X	
Field Blank 1	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X	
Field Blank 2	2/22/17	-	Grab	Water	5	N	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

**Received by:** [Signature] **Company:** TestAmerica **Date/Time:** 2-23-17 15:15  
**Received by:** [Signature] **Company:** TestAmerica **Date/Time:** 2-24-17 09:30  
**Received by:** [Signature] **Company:** TestAmerica **Date/Time:** 2-24-17 09:30

**Custody Seal No.:** [Blank]  
**Relinquished by:** [Signature] **Company:** TestAmerica  
**Relinquished by:** [Signature] **Company:** TestAmerica  
**Relinquished by:** [Signature] **Company:** TestAmerica

**Therm ID No.:** #3 3.3, 2.6, 3.0  
**Cooler Temp. (°C):** Obs'd: [Blank] Cor'd: [Blank]

# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-113905-1

SDG Number: 113905

**Login Number: 113905**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	SKB
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	





# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-113905-2

TestAmerica Sample Delivery Group: 113905

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

3/29/2017 11:24:07 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

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[www.testamericainc.com](http://www.testamericainc.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

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**Job ID: 480-113905-2**

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**Laboratory: TestAmerica Buffalo**

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**Narrative**

**Job Narrative  
480-113905-2**

**Comments**

No additional comments.

**Receipt**

The samples were received on 2/24/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6° C, 3.0° C and 3.3° C.

**RAD**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-113905-1**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-113905-2**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-113905-3**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-113905-4**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-113905-5**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-113905-6**

No Detections.

**Client Sample ID: D-2S**

**Lab Sample ID: 480-113905-7**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-113905-8**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-113905-9**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-113905-10**

No Detections.

**Client Sample ID: D-8**

**Lab Sample ID: 480-113905-11**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-113905-12**

No Detections.

**Client Sample ID: U-4S**

**Lab Sample ID: 480-113905-13**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-113905-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

**Client Sample ID: U-5S**

**Lab Sample ID: 480-113905-15**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-113905-16**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-113905-17**

No Detections.

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-113905-18**

No Detections.

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-113905-19**

No Detections.

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-113905-20**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-5S2**  
**Date Collected: 02/21/17 08:25**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-1**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	18.7	U	19.6	19.6	50.0	24.5	pCi/L	03/02/17 13:42	03/23/17 13:41	1
Radium-228	-4.29	U	7.02	7.03	50.0	49.6	pCi/L	03/02/17 13:42	03/23/17 13:41	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-5D**  
**Date Collected: 02/21/17 09:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-2**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	18.6	U	8.74	8.94	50.0	47.2	pCi/L	03/02/17 13:42	03/23/17 12:43	1
Radium-228	23.8	U	28.5	28.6	50.0	33.8	pCi/L	03/02/17 13:42	03/23/17 12:43	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-3S**  
**Date Collected: 02/21/17 09:30**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-3**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	10.9	U	12.7	12.8	50.0	18.1	pCi/L	03/02/17 13:42	03/27/17 12:15	1
Radium-228	22.8	U	21.2	21.3	50.0	24.8	pCi/L	03/02/17 13:42	03/27/17 12:15	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-3D**  
**Date Collected: 02/21/17 10:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-4**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	6.85	U	10.3	10.3	50.0	44.2	pCi/L	03/02/17 13:42	03/23/17 13:47	1
Radium-228	14.1	U	24.7	24.8	50.0	33.8	pCi/L	03/02/17 13:42	03/23/17 13:47	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-1S**  
**Date Collected: 02/21/17 11:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-5**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	16.0	U	16.1	16.2	50.0	22.2	pCi/L	03/02/17 13:42	03/23/17 13:48	1
Radium-228	18.0	U	18.9	19.0	50.0	36.8	pCi/L	03/02/17 13:42	03/23/17 13:48	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-1D**  
**Date Collected: 02/21/17 11:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-6**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>28.4</b>		18.0	18.3	50.0	18.1	pCi/L	03/02/17 13:42	03/27/17 14:36	1
Radium-228	6.98	U	25.8	25.8	50.0	30.7	pCi/L	03/02/17 13:42	03/27/17 14:36	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-2S**  
**Date Collected: 02/21/17 13:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-7**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.676	U	0.894	0.897	50.0	40.8	pCi/L	03/02/17 13:42	03/27/17 15:11	1
Radium-228	4.29	U	22.7	22.7	50.0	28.7	pCi/L	03/02/17 13:42	03/27/17 15:11	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-2D**  
**Date Collected: 02/21/17 13:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-8**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>24.3</b>		25.6	25.7	50.0	23.7	pCi/L	03/02/17 13:42	03/23/17 16:46	1
Radium-228	17.9	U	32.1	32.2	50.0	42.3	pCi/L	03/02/17 13:42	03/23/17 16:46	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-4S**  
**Date Collected: 02/21/17 14:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-9**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-13.1	U	28.9	28.9	50.0	47.7	pCi/L	03/02/17 13:42	03/23/17 16:48	1
Radium-228	16.9	U	28.6	28.7	50.0	28.4	pCi/L	03/02/17 13:42	03/23/17 16:48	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-4D**  
**Date Collected: 02/21/17 14:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-10**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	28.4		16.2	16.5	50.0	20.4	pCi/L	03/02/17 13:42	03/24/17 15:08	1
Radium-228	31.0		26.7	26.9	50.0	28.4	pCi/L	03/02/17 13:42	03/24/17 15:08	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-8**

**Date Collected: 02/22/17 08:40**

**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-11**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-6.76	U	28.9	28.9	50.0	48.8	pCi/L	03/02/17 13:42	03/28/17 11:56	1
Radium-228	6.19	U	9.72	9.74	50.0	43.1	pCi/L	03/02/17 13:42	03/28/17 11:56	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-9**

**Date Collected: 02/22/17 09:20**

**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-12**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.713	U	2.30	2.31	50.0	42.3	pCi/L	03/02/17 13:42	03/23/17 19:09	1
Radium-228	-1.40	U	31.1	31.1	50.0	42.3	pCi/L	03/02/17 13:42	03/23/17 19:09	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: U-4S**  
**Date Collected: 02/22/17 11:30**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-13**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	13.2	U	16.0	16.1	50.0	16.9	pCi/L	03/02/17 13:42	03/27/17 17:15	1
Radium-228	9.52	U	20.1	20.1	50.0	31.1	pCi/L	03/02/17 13:42	03/27/17 17:15	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: U-4D**  
**Date Collected: 02/22/17 12:20**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-14**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	26.1	U	11.9	12.2	50.0	40.3	pCi/L	03/02/17 13:42	03/23/17 19:10	1
Radium-228	-1.63	U	32.2	32.2	50.0	38.4	pCi/L	03/02/17 13:42	03/23/17 19:10	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: U-5S**  
**Date Collected: 02/22/17 12:55**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-15**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-7.11	U	24.9	25.0	50.0	43.6	pCi/L	03/02/17 13:42	03/23/17 19:13	1
Radium-228	5.08	U	13.9	13.9	50.0	41.8	pCi/L	03/02/17 13:42	03/23/17 19:13	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: U-5D**  
**Date Collected: 02/22/17 13:50**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-16**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>36.7</b>		15.8	16.3	50.0	17.8	pCi/L	03/02/17 13:42	03/24/17 16:37	1
Radium-228	14.0	U	18.5	18.6	50.0	27.1	pCi/L	03/02/17 13:42	03/24/17 16:37	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: DUP-1**  
**Date Collected: 02/22/17 00:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-17**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-3.64	U	6.33	6.35	50.0	48.8	pCi/L	03/02/17 13:42	03/23/17 19:11	1
Radium-228	3.99	U	7.48	7.49	50.0	33.2	pCi/L	03/02/17 13:42	03/23/17 19:11	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: DUP-2**

**Date Collected: 02/22/17 00:00**

**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-18**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	34.0		15.0	15.4	50.0	17.0	pCi/L	03/02/17 13:42	03/27/17 19:24	1
Radium-228	22.9		18.7	18.9	50.0	19.8	pCi/L	03/02/17 13:42	03/27/17 19:24	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-113905-19**

**Date Collected: 02/22/17 00:00**

**Matrix: Water**

**Date Received: 02/24/17 09:30**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	13.3	U	14.3	14.3	50.0	21.2	pCi/L	03/02/17 13:42	03/23/17 19:12	1
Radium-228	11.5	U	32.6	32.6	50.0	49.6	pCi/L	03/02/17 13:42	03/23/17 19:12	1

- 1
- 2
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- 11
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- 13
- 14



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-113905-20**

**Date Collected: 02/22/17 00:00**

**Matrix: Water**

**Date Received: 02/24/17 09:30**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-7.11	U	25.6	25.6	50.0	44.7	pCi/L	03/02/17 13:42	03/23/17 20:24	1
Radium-228	19.9	U	24.8	24.9	50.0	31.0	pCi/L	03/02/17 13:42	03/23/17 20:24	1

- 1
- 2
- 3
- 4
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- 12
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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

## Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

**Lab Sample ID: MB 160-295687/1-A**  
**Matrix: Water**  
**Analysis Batch: 299104**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 295687**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-6.751	U	27.6	27.6	50.0	47.5	pCi/L	03/02/17 13:42	03/23/17 12:39	1
Radium-228	10.03	U	30.7	30.7	50.0	44.9	pCi/L	03/02/17 13:42	03/23/17 12:39	1

**Lab Sample ID: LCS 160-295687/2-A**  
**Matrix: Water**  
**Analysis Batch: 299104**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 295687**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Americium-241	136000	139400		16100		437	pCi/L	102	90 - 111
Cesium-137	46900	48690		4840		120	pCi/L	104	90 - 111
Cobalt-60	39300	39080		3860		105	pCi/L	100	89 - 110

**Lab Sample ID: 480-113905-1 DU**  
**Matrix: Water**  
**Analysis Batch: 299270**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**  
**Prep Batch: 295687**

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	18.7	U	-3.602	U	6.47	50.0	29.6	pCi/L	0.85	1
Radium-228	-4.29	U	18.48	U	31.3	50.0	33.8	pCi/L	0.59	1

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

## Rad

### Prep Batch: 295687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-113905-1	D-5S2	Total/NA	Water	Fill_Geo-21	
480-113905-2	D-5D	Total/NA	Water	Fill_Geo-21	
480-113905-3	D-3S	Total/NA	Water	Fill_Geo-21	
480-113905-4	D-3D	Total/NA	Water	Fill_Geo-21	
480-113905-5	D-1S	Total/NA	Water	Fill_Geo-21	
480-113905-6	D-1D	Total/NA	Water	Fill_Geo-21	
480-113905-7	D-2S	Total/NA	Water	Fill_Geo-21	
480-113905-8	D-2D	Total/NA	Water	Fill_Geo-21	
480-113905-9	D-4S	Total/NA	Water	Fill_Geo-21	
480-113905-10	D-4D	Total/NA	Water	Fill_Geo-21	
480-113905-11	D-8	Total/NA	Water	Fill_Geo-21	
480-113905-12	D-9	Total/NA	Water	Fill_Geo-21	
480-113905-13	U-4S	Total/NA	Water	Fill_Geo-21	
480-113905-14	U-4D	Total/NA	Water	Fill_Geo-21	
480-113905-15	U-5S	Total/NA	Water	Fill_Geo-21	
480-113905-16	U-5D	Total/NA	Water	Fill_Geo-21	
480-113905-17	DUP-1	Total/NA	Water	Fill_Geo-21	
480-113905-18	DUP-2	Total/NA	Water	Fill_Geo-21	
480-113905-19	FIELD BLANK 1	Total/NA	Water	Fill_Geo-21	
480-113905-20	FIELD BLANK 2	Total/NA	Water	Fill_Geo-21	
MB 160-295687/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-295687/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
480-113905-1 DU	D-5S2	Total/NA	Water	Fill_Geo-21	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

## Client Sample ID: D-5S2

Date Collected: 02/21/17 08:25

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299104	03/23/17 13:41	KLS	TAL SL

## Client Sample ID: D-5D

Date Collected: 02/21/17 09:00

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299270	03/23/17 12:43	KLS	TAL SL

## Client Sample ID: D-3S

Date Collected: 02/21/17 09:30

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300123	03/27/17 12:15	KLS	TAL SL

## Client Sample ID: D-3D

Date Collected: 02/21/17 10:10

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299270	03/23/17 13:47	KLS	TAL SL

## Client Sample ID: D-1S

Date Collected: 02/21/17 11:10

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299269	03/23/17 13:48	KLS	TAL SL

## Client Sample ID: D-1D

Date Collected: 02/21/17 11:55

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300123	03/27/17 14:36	KLS	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

**Client Sample ID: D-2S**  
**Date Collected: 02/21/17 13:00**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300096	03/27/17 15:11	RTM	TAL SL

**Client Sample ID: D-2D**  
**Date Collected: 02/21/17 13:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-8**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299271	03/23/17 16:46	KLS	TAL SL

**Client Sample ID: D-4S**  
**Date Collected: 02/21/17 14:10**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-9**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299270	03/23/17 16:48	KLS	TAL SL

**Client Sample ID: D-4D**  
**Date Collected: 02/21/17 14:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-10**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299437	03/24/17 15:08	KLS	TAL SL

**Client Sample ID: D-8**  
**Date Collected: 02/22/17 08:40**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-11**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300168	03/28/17 11:56	KLS	TAL SL

**Client Sample ID: D-9**  
**Date Collected: 02/22/17 09:20**  
**Date Received: 02/24/17 09:30**

**Lab Sample ID: 480-113905-12**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299271	03/23/17 19:09	KLS	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

## Client Sample ID: U-4S

Date Collected: 02/22/17 11:30

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300096	03/27/17 17:15	RTM	TAL SL

## Client Sample ID: U-4D

Date Collected: 02/22/17 12:20

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299270	03/23/17 19:10	KLS	TAL SL

## Client Sample ID: U-5S

Date Collected: 02/22/17 12:55

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299269	03/23/17 19:13	KLS	TAL SL

## Client Sample ID: U-5D

Date Collected: 02/22/17 13:50

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299432	03/24/17 16:37	KLS	TAL SL

## Client Sample ID: DUP-1

Date Collected: 02/22/17 00:00

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299267	03/23/17 19:11	KLS	TAL SL

## Client Sample ID: DUP-2

Date Collected: 02/22/17 00:00

Date Received: 02/24/17 09:30

## Lab Sample ID: 480-113905-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	300123	03/27/17 19:24	KLS	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-113905-19

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299104	03/23/17 19:12	KLS	TAL SL

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-113905-20

Date Collected: 02/22/17 00:00

Matrix: Water

Date Received: 02/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			295687	03/02/17 13:42	R1S	TAL SL
Total/NA	Analysis	901.1		1	299269	03/23/17 20:24	KLS	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
 SDG: 113905

## Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

## Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

\* Certification renewal pending - certification considered valid.



# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

Method	Method Description	Protocol	Laboratory
901.1	Radium-226 & Other Gamma Emitters (GS)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-113905-2  
SDG: 113905

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-113905-1	D-5S2	Water	02/21/17 08:25	02/24/17 09:30
480-113905-2	D-5D	Water	02/21/17 09:00	02/24/17 09:30
480-113905-3	D-3S	Water	02/21/17 09:30	02/24/17 09:30
480-113905-4	D-3D	Water	02/21/17 10:10	02/24/17 09:30
480-113905-5	D-1S	Water	02/21/17 11:10	02/24/17 09:30
480-113905-6	D-1D	Water	02/21/17 11:55	02/24/17 09:30
480-113905-7	D-2S	Water	02/21/17 13:00	02/24/17 09:30
480-113905-8	D-2D	Water	02/21/17 13:40	02/24/17 09:30
480-113905-9	D-4S	Water	02/21/17 14:10	02/24/17 09:30
480-113905-10	D-4D	Water	02/21/17 14:40	02/24/17 09:30
480-113905-11	D-8	Water	02/22/17 08:40	02/24/17 09:30
480-113905-12	D-9	Water	02/22/17 09:20	02/24/17 09:30
480-113905-13	U-4S	Water	02/22/17 11:30	02/24/17 09:30
480-113905-14	U-4D	Water	02/22/17 12:20	02/24/17 09:30
480-113905-15	U-5S	Water	02/22/17 12:55	02/24/17 09:30
480-113905-16	U-5D	Water	02/22/17 13:50	02/24/17 09:30
480-113905-17	DUP-1	Water	02/22/17 00:00	02/24/17 09:30
480-113905-18	DUP-2	Water	02/22/17 00:00	02/24/17 09:30
480-113905-19	FIELD BLANK 1	Water	02/22/17 00:00	02/24/17 09:30
480-113905-20	FIELD BLANK 2	Water	02/22/17 00:00	02/24/17 09:30

**Chain of Custody Record**

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Ryan Van Dette

Site Contact: Nathaniel Beineman

Lab Contact:

Project Name: RSMNT 2017 COR GW Event 1

SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Site: P O # 3063-17-00267

COC No: 1

Date: 2/21/17

Carrier:

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-55Z	2/21/17	8:25	Grab	Water	5	N		X	X	X	X	X	X	X	
D-5D	2/21/17	9:00	Grab	Water	5	N		X	X	X	X	X	X	X	
D-3S	2/21/17	9:30	Grab	Water	5	N		X	X	X	X	X	X	X	
D-3D	2/21/17	10:10	Grab	Water	5	N		X	X	X	X	X	X	X	
D-1S	2/21/17	11:10	Grab	Water	5	N		X	X	X	X	X	X	X	
D-1D	2/21/17	11:55	Grab	Water	5	N		X	X	X	X	X	X	X	
D-2S	2/21/17	12:00	Grab	Water	5	N		X	X	X	X	X	X	X	
D-2D	2/21/17	12:40	Grab	Water	5	N		X	X	X	X	X	X	X	
D-4S	2/21/17	14:10	Grab	Water	5	N		X	X	X	X	X	X	X	
D-4D	2/21/17	14:40	Grab	Water	5	N		X	X	X	X	X	X	X	
D-8	2/22/17	8:40	Grab	Water	5	N		X	X	X	X	X	X	X	
D-9	2/22/17	9:20	Grab	Water	5	N		X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.: 6ES

Relinquished by: *Ann Kelly* Date/Time: 2/23/17 12:00

Relinquished by: *Ann Kelly* Date/Time: 2/23/17 17:00

Relinquished by: *Ann Kelly* Date/Time: 2/23/17 17:00

Received by: *Ann Kelly* Date/Time: 2/23/17 17:00

Received in Laboratory by: *Ann Kelly*

Company: *TESTAMERICA* Date/Time: 2-23-17 15:15

Company: *TESTAMERICA* Date/Time: 2/24/17 09:30

Company: *TESTAMERICA* Date/Time: 2/24/17 09:30

Company: *TESTAMERICA* Date/Time: 2/24/17 09:30

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact: SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 1  
Site:  
P O # 3063-17-00267

Project Manager: Ryan Van Dette  
Tel/Fax:  
Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Performs MS/MSD (Y/N)	Metals (totals)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
V-45	2/22/17	11:30	Grab	Water	5	N		X	X	X	X	X	X	X	
V-4D	2/22/17	12:20	Grab	Water	5	N		X	X	X	X	X	X	X	
V-55	2/22/17	12:55	Grab	Water	5	N		X	X	X	X	X	X	X	
V-5D	2/22/17	13:50	Grab	Water	5	N		X	X	X	X	X	X	X	
DUP-1	2/22/17	-	Grab	Water	5	N		X	X	X	X	X	X	X	
DUP-2	2/22/17	-	Grab	Water	5	N		X	X	X	X	X	X	X	
Field Blank 1	2/22/17	-	Grab	Water	5	N		X	X	X	X	X	X	X	
Field Blank 2	2/22/17	-	Grab	Water	5	N		X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seal No.: \_\_\_\_\_  
Relinquished by: *M. Kelly*  
Relinquished by: *James G. Ren*  
Relinquished by: \_\_\_\_\_

Company: *TEST*  
Company: *TEST*  
Company: \_\_\_\_\_

Date/Time: 2/23/17 12:00  
Date/Time: 2/23/17 17:10  
Date/Time: \_\_\_\_\_

Received by: *James G. Ren*  
Received by: *James G. Ren*  
Received in Laboratory by: \_\_\_\_\_

Company: *TEST*  
Company: *TEST*  
Company: \_\_\_\_\_

Date/Time: 2-23-17 15:15  
Date/Time: 2/24/17 09:30  
Date/Time: \_\_\_\_\_

Therm ID No.: \_\_\_\_\_  
Cooler Temp. (°C): Obs'd: \_\_\_\_\_  
Corr'd: \_\_\_\_\_





**Chain of Custody Record**

**TestAmerica Buffalo**  
10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

**Client Information (Sub Contract Lab)**  
 Client Contact: VanDette, Ryan T Lab PM:  
 Shipping/Receiving: ryan.vandette@testamericainc.com E-Mail: VanDette, Ryan T  
 Company: TestAmerica Laboratories, Inc. Address: 13715 Rider Trail North, Earth City, MO, 63045 City: Earth City  
 Address: 13715 Rider Trail North, Earth City, MO, 63045 State: MO Zip: 63045  
 Phone: 314-298-8566(Tel) 314-298-8757(Fax) PO #: \_\_\_\_\_  
 Email: \_\_\_\_\_ WO #: \_\_\_\_\_  
 Project Name: SKB Rosemount Project #: 48013709  
 Site: Rosemount SSOW#: \_\_\_\_\_

**Accreditations Required (See note):** MINNESOTA  
NELAP - Minnesota  
 Due Date Requested: 3/8/2017  
 TAT Requested (days): \_\_\_\_\_

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Wastewater, BT=Tissue, A=Al)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1, Ra/Ra/III, Geo, 21 Radium-226/228	Analysis Requested		Total Number of Containers	Special Instructions/Note:
D-5S2 (480-113905-1)	2/21/17	08:25 Central	Water	Water		X	X				1	
D-5D (480-113905-2)	2/21/17	09:00 Central	Water	Water		X	X				1	
D-3S (480-113905-3)	2/21/17	09:30 Central	Water	Water		X	X				1	
D-3D (480-113905-4)	2/21/17	10:10 Central	Water	Water		X	X				1	
D-1S (480-113905-5)	2/21/17	11:10 Central	Water	Water		X	X				1	
D-1D (480-113905-6)	2/21/17	11:55 Central	Water	Water		X	X				1	
D-2S (480-113905-7)	2/21/17	13:00 Central	Water	Water		X	X				1	
D-2D (480-113905-8)	2/21/17	13:40 Central	Water	Water		X	X				1	
D-4S (480-113905-9)	2/21/17	14:10 Central	Water	Water		X	X				1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, V, Other (specify)  
 Primary Deliverable Rank: 2  
 Date: \_\_\_\_\_  
 Empty Kit Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:  
 Date/Time: 2/28/17 09:15  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Company: ASTL  
 Company: \_\_\_\_\_  
 Company: \_\_\_\_\_





**Chain of Custody Record**

**Client Information (Sub Contract Lab)**

Client Contact: **VanDette, Ryan T**  
 Shipping/Receiving: **ryan.vandette@testamericainc.com**  
 Company: **TestAmerica Laboratories, Inc.**  
 Address: **13715 Rider Trail North,**  
 City: **Earth City**  
 State, Zip: **MO, 63045**  
 Phone: **314-298-8566(Tel) 314-298-8757(Fax)**  
 Email:

Project Name: **SKB Rosemount**  
 Site: **Rosemount**

Sampler: **VanDette, Ryan T**  
 Phone:   
 Lab P#:   
 E-Mail:

Carrier Tracking No(s): **480-33545.2**  
 State of Origin: **Minnesota**  
 Page: **Page 2 of 3**  
 Job #: **480-113905-1**

Accreditations Required (See note):  
 NELAP - Minnesota

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tris, A=AT)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1 Ra/Fill_Geo_21 Radium-226/228	Analysis Requested	Total Number of Containers	Special Instructions/Note:
						Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)				
D-4D (480-113905-10)	2/21/17	14:40 Central		Water		X	X			1	
D-8 (480-113905-11)	2/22/17	08:40 Central		Water		X	X			1	
D-9 (480-113905-12)	2/22/17	09:20 Central		Water		X	X			1	
U-4S (480-113905-13)	2/22/17	11:30 Central		Water		X	X			1	
U-4D (480-113905-14)	2/22/17	12:20 Central		Water		X	X			1	
U-5S (480-113905-15)	2/22/17	12:55 Central		Water		X	X			1	
U-5D (480-113905-16)	2/22/17	13:50 Central		Water		X	X			1	
DUP-1 (480-113905-17)	2/22/17	Central		Water		X	X			1	
DUP-2 (480-113905-18)	2/22/17	Central		Water		X	X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

**Possible Hazard Identification**

Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_

Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Relinquished by: **MSD ADS** Date: **2/27/17 17:00** Company: **TestAmerica**

Custody Seal No.: **Δ Yes Δ No**



## Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b>			Lab PM: VanDette, Ryan T		Carrier Tracking No(s):
Client Contact: Shipping/Receiving			E-Mail: ryan.vandette@testamericainc.com		State of Origin: Minnesota
Company: TestAmerica Laboratories, Inc.			Accreditations Required (See note): NELAP - Minnesota		COC No: 480-33545.3
Address: 13715 Rider Trail North,			Due Date Requested: 3/8/2017		Page: Page 3 of 3
City: Earth City			TAT Requested (days):		Job #: 480-113905-1
State, Zip: MO, 63045			PO #:		<b>Preservation Codes:</b>
Phone: 314-298-8566(Tel) 314-298-8757(Fax)			WO #:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:
Project Name: SKB Rosemount			Project #: 48013709		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecathylrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Site: Rosemount			SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, On-waste, Soil, BT-Tissue, A-Air)	Field Filtered Sample (Yes or No)		Perform M/MSD (Yes or No)		901_Ra/Fill_Geo_21 Radium-226/228	Analysis Requested	Total Number of containers	Special Instructions/Note:
					Preservation Code:	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)					
FIELD BLANK 1 (480-113905-19)	2/22/17	Central		Water		X			X		1	
FIELD BLANK 2 (480-113905-20)	2/22/17	Central		Water		X			X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. |

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	2/22/17	17:00	Company: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>			Company: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>			Company: <i>[Signature]</i>
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:		

Cooler Temperature(s) °C and Other Remarks:





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-113905-2

SDG Number: 113905

**Login Number: 113905**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	SKB
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-113905-2

SDG Number: 113905

**Login Number: 113905**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 03/01/17 04:43 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-115060-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

4/7/2017 6:18:47 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Job ID: 480-115060-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-115060-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/24/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.5° C, 1.7° C, 1.9° C and 2.0° C.

#### HPLC/IC

Method(s) 300.0: The following samples were reported with elevated reporting limits for all analytes: D-1D (480-115060-1), D-1S (480-115060-2), D-2D (480-115060-3), D-2S (480-115060-4) and D-3D (480-115060-5). The samples were analyzed at a dilution based on screening results.

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: D-3S (480-115060-6), D-4D (480-115060-7), D-4S (480-115060-8), D-5D (480-115060-9), D-5S2 (480-115060-10), D-8 (480-115060-11), D-9 (480-115060-12), U-4D (480-115060-13), U-4S (480-115060-14), U-5D (480-115060-15), U-5S (480-115060-16), DUP-1 (480-115060-17) and DUP-2 (480-115060-18). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

Method(s) SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-5S2 (480-115060-10), D-8 (480-115060-11), D-9 (480-115060-12), U-4D (480-115060-13), U-4S (480-115060-14), U-5D (480-115060-15), U-5S (480-115060-16), DUP-1 (480-115060-17), DUP-2 (480-115060-18), FIELD BLANK 1 (480-115060-19), FIELD BLANK 2 (480-115060-20) and EQUIPMENT BLANK (480-115060-21).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-1D (480-115060-1), D-1S (480-115060-2), D-2D (480-115060-3), D-2S (480-115060-4), D-3D (480-115060-5), D-3S (480-115060-6), D-4D (480-115060-7), D-4S (480-115060-8) and D-5D (480-115060-9).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: D-1D

## Lab Sample ID: 480-115060-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.1		0.50		mg/L	1		6010C	Total/NA
Chloride	39.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	411		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-115060-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Boron	0.038		0.020		mg/L	1		6010C	Total/NA
Calcium	103		0.50		mg/L	1		6010C	Total/NA
Chloride	32.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	436		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-115060-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.3		0.50		mg/L	1		6010C	Total/NA
Chloride	32.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	25.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	391		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-115060-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	98.7		0.50		mg/L	1		6010C	Total/NA
Chloride	45.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	414		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-115060-5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: D-3D (Continued)

## Lab Sample ID: 480-115060-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chloride	31.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	32.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	418		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-115060-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Boron	0.055		0.020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Chloride	55.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	39.9		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	431		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-115060-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.060		0.0020		mg/L	1		6010C	Total/NA
Calcium	92.3		0.50		mg/L	1		6010C	Total/NA
Chloride	43.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	31.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	421		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-115060-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.070		0.0020		mg/L	1		6010C	Total/NA
Calcium	96.2		0.50		mg/L	1		6010C	Total/NA
Chloride	45.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	33.8		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	427		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-115060-9

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: D-5D (Continued)

## Lab Sample ID: 480-115060-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	94.2		0.50		mg/L	1		6010C	Total/NA
Chloride	23.9		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.12		0.10		mg/L	2		300.0	Total/NA
Sulfate	34.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	420		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-115060-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.072		0.0020		mg/L	1		6010C	Total/NA
Boron	0.050		0.020		mg/L	1		6010C	Total/NA
Calcium	118		0.50		mg/L	1		6010C	Total/NA
Chloride	42.9		1.0		mg/L	2		300.0	Total/NA
Sulfate	47.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	486		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-115060-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	74.9		0.50		mg/L	1		6010C	Total/NA
Chloride	18.4		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.10		0.10		mg/L	2		300.0	Total/NA
Sulfate	46.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	338		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-115060-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.061		0.0020		mg/L	1		6010C	Total/NA
Calcium	94.8		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.49		0.30		ug/L	1		6020A	Total/NA
Chloride	45.1		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	417		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: U-4D

## Lab Sample ID: 480-115060-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.041		0.0020		mg/L	1		6010C	Total/NA
Calcium	87.7		0.50		mg/L	1		6010C	Total/NA
Chloride	40.8		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.11		0.10		mg/L	2		300.0	Total/NA
Sulfate	32.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	429		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4S

## Lab Sample ID: 480-115060-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.039		0.0020		mg/L	1		6010C	Total/NA
Calcium	88.7		0.50		mg/L	1		6010C	Total/NA
Chromium	0.016		0.0040		mg/L	1		6010C	Total/NA
Chloride	40.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	35.9		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	409		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-115060-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.055		0.0020		mg/L	1		6010C	Total/NA
Calcium	86.5		0.50		mg/L	1		6010C	Total/NA
Chloride	30.3		1.0		mg/L	2		300.0	Total/NA
Sulfate	32.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	394		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	18.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-115060-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.060		0.0020		mg/L	1		6010C	Total/NA
Calcium	88.4		0.50		mg/L	1		6010C	Total/NA
Chloride	41.6		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.11		0.10		mg/L	2		300.0	Total/NA
Sulfate	26.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	448		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 480-115060-17

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: DUP-1 (Continued)

## Lab Sample ID: 480-115060-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.060		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	91.3		0.50		mg/L	1		6010C	Total/NA
Chloride	41.6		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.11		0.10		mg/L	2		300.0	Total/NA
Sulfate	26.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	440		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-2

## Lab Sample ID: 480-115060-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	98.2		0.50		mg/L	1		6010C	Total/NA
Chloride	32.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	35.0		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	417		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

## Lab Sample ID: 480-115060-19

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 2

## Lab Sample ID: 480-115060-20

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	5.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-115060-21

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-1D**  
**Date Collected: 03/22/17 13:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.049</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 05:31	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 05:31	1
<b>Calcium</b>	<b>89.1</b>		0.50		mg/L		03/27/17 09:20	03/29/17 05:31	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 05:31	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 05:31	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 05:31	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:06	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:06	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 00:51	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 22:06	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 22:06	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:06	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:06	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 22:06	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 11:52	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>39.7</b>		2.5		mg/L			04/04/17 20:31	5
Fluoride	ND		0.25		mg/L			04/04/17 20:31	5
<b>Sulfate</b>	<b>29.4</b>		10.0		mg/L			04/04/17 20:31	5
<b>Total Dissolved Solids</b>	<b>411</b>		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			03/28/17 15:42	1
<b>Temperature</b>	<b>18.1</b>	<b>HF</b>	0.001		Degrees C			03/28/17 15:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-1S**  
**Date Collected: 03/22/17 13:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		03/27/17 09:20	03/29/17 05:34	1
Boron	0.038		0.020		mg/L		03/27/17 09:20	03/29/17 05:34	1
Calcium	103		0.50		mg/L		03/27/17 09:20	03/29/17 05:34	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 05:34	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 05:34	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 05:34	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:12	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:12	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 00:56	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 22:12	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 22:12	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:12	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:12	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 22:12	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.8		2.5		mg/L			04/04/17 20:40	5
Fluoride	ND		0.25		mg/L			04/04/17 20:40	5
Sulfate	29.1		10.0		mg/L			04/04/17 20:40	5
Total Dissolved Solids	436		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			03/28/17 15:45	1
Temperature	18.4	HF	0.001		Degrees C			03/28/17 15:45	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-2D**  
**Date Collected: 03/22/17 15:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:02	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:02	1
<b>Calcium</b>	<b>89.3</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:02	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:02	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:02	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:02	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:17	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:17	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 01:02	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 22:17	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 22:17	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:17	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 22:17	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 22:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:02	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>32.5</b>		2.5		mg/L			04/04/17 20:48	5
Fluoride	ND		0.25		mg/L			04/04/17 20:48	5
<b>Sulfate</b>	<b>25.8</b>		10.0		mg/L			04/04/17 20:48	5
<b>Total Dissolved Solids</b>	<b>391</b>		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			03/28/17 15:48	1
<b>Temperature</b>	<b>18.3</b>	<b>HF</b>	0.001		Degrees C			03/28/17 15:48	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-2S**  
**Date Collected: 03/22/17 14:45**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.050		0.0020		mg/L		03/27/17 09:20	03/29/17 06:06	1
Boron	0.020		0.020		mg/L		03/27/17 09:20	03/29/17 06:06	1
Calcium	98.7		0.50		mg/L		03/27/17 09:20	03/29/17 06:06	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:06	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:06	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:06	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:02	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:02	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 01:29	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:02	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:02	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:02	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:02	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:02	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:03	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.6		2.5		mg/L			04/04/17 20:56	5
Fluoride	ND		0.25		mg/L			04/04/17 20:56	5
Sulfate	28.0		10.0		mg/L			04/04/17 20:56	5
Total Dissolved Solids	414		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			03/28/17 15:52	1
Temperature	18.2	HF	0.001		Degrees C			03/28/17 15:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-3D**  
**Date Collected: 03/22/17 11:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		03/27/17 09:20	03/29/17 06:09	1
Boron	0.023		0.020		mg/L		03/27/17 09:20	03/29/17 06:09	1
Calcium	102		0.50		mg/L		03/27/17 09:20	03/29/17 06:09	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:09	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:09	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:09	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:08	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:08	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 01:52	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:08	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:08	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:08	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:08	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:05	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.3		2.5		mg/L			04/04/17 21:04	5
Fluoride	ND		0.25		mg/L			04/04/17 21:04	5
Sulfate	32.0		10.0		mg/L			04/04/17 21:04	5
Total Dissolved Solids	418		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			03/28/17 15:55	1
Temperature	18.2	HF	0.001		Degrees C			03/28/17 15:55	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-3S**  
**Date Collected: 03/22/17 11:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.049		0.0020		mg/L		03/27/17 09:20	03/29/17 06:13	1
Boron	0.055		0.020		mg/L		03/27/17 09:20	03/29/17 06:13	1
Calcium	101		0.50		mg/L		03/27/17 09:20	03/29/17 06:13	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:13	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:13	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:13	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:13	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:13	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 01:58	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:13	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:13	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:13	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:13	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:13	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55.7		1.0		mg/L			04/07/17 12:40	2
Fluoride	ND		0.10		mg/L			04/07/17 12:40	2
Sulfate	39.9		4.0		mg/L			04/07/17 12:40	2
Total Dissolved Solids	431		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			03/28/17 15:58	1
Temperature	18.1	HF	0.001		Degrees C			03/28/17 15:58	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-4D**  
**Date Collected: 03/23/17 09:15**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-7**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.060</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:16	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:16	1
<b>Calcium</b>	<b>92.3</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:16	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:16	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:16	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:16	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:19	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:19	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:03	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:19	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:19	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:19	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:19	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:19	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:12	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43.8</b>		1.0		mg/L			04/07/17 12:48	2
Fluoride	ND		0.10		mg/L			04/07/17 12:48	2
<b>Sulfate</b>	<b>31.3</b>		4.0		mg/L			04/07/17 12:48	2
<b>Total Dissolved Solids</b>	<b>421</b>		10.0		mg/L			03/29/17 08:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			03/28/17 16:01	1
<b>Temperature</b>	<b>18.3</b>	<b>HF</b>	0.001		Degrees C			03/28/17 16:01	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-4S**  
**Date Collected: 03/23/17 09:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-8**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.070</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:30	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:30	1
<b>Calcium</b>	<b>96.2</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:30	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:30	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:30	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:30	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:28	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:28	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:09	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:28	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:28	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:28	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:28	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:28	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:13	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>45.2</b>		1.0		mg/L			04/07/17 12:56	2
Fluoride	ND		0.10		mg/L			04/07/17 12:56	2
<b>Sulfate</b>	<b>33.8</b>		4.0		mg/L			04/07/17 12:56	2
<b>Total Dissolved Solids</b>	<b>427</b>		10.0		mg/L			03/29/17 08:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			03/28/17 16:04	1
<b>Temperature</b>	<b>18.5</b>	<b>HF</b>	0.001		Degrees C			03/28/17 16:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-5D**  
**Date Collected: 03/22/17 09:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:34	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:34	1
<b>Calcium</b>	<b>94.2</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:34	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:34	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:34	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:34	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:34	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:34	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:14	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:34	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:34	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:34	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:34	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:34	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:15	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>23.9</b>		1.0		mg/L			04/07/17 13:04	2
<b>Fluoride</b>	<b>0.12</b>		0.10		mg/L			04/07/17 13:04	2
<b>Sulfate</b>	<b>34.4</b>		4.0		mg/L			04/07/17 13:04	2
<b>Total Dissolved Solids</b>	<b>420</b>		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			03/28/17 16:07	1
<b>Temperature</b>	<b>18.4</b>	<b>HF</b>	0.001		Degrees C			03/28/17 16:07	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-5S2**  
**Date Collected: 03/22/17 09:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.072		0.0020		mg/L		03/27/17 09:20	03/29/17 06:38	1
Boron	0.050		0.020		mg/L		03/27/17 09:20	03/29/17 06:38	1
Calcium	118		0.50		mg/L		03/27/17 09:20	03/29/17 06:38	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:38	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:38	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:38	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:39	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:39	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:20	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:39	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:39	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:39	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:39	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:17	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.9		1.0		mg/L			04/07/17 13:13	2
Fluoride	ND		0.10		mg/L			04/07/17 13:13	2
Sulfate	47.3		4.0		mg/L			04/07/17 13:13	2
Total Dissolved Solids	486		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			03/27/17 17:52	1
Temperature	19.0	HF	0.001		Degrees C			03/27/17 17:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-8**

**Date Collected: 03/23/17 10:25**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-11**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:41	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:41	1
<b>Calcium</b>	<b>74.9</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:41	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:41	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:41	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:41	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:45	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:45	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:25	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 23:45	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 23:45	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:45	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 23:45	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 23:45	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>18.4</b>		1.0		mg/L			04/07/17 13:21	2
<b>Fluoride</b>	<b>0.10</b>		0.10		mg/L			04/07/17 13:21	2
<b>Sulfate</b>	<b>46.1</b>		4.0		mg/L			04/07/17 13:21	2
<b>Total Dissolved Solids</b>	<b>338</b>		10.0		mg/L			03/29/17 08:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			03/27/17 17:55	1
<b>Temperature</b>	<b>19.3</b>	<b>HF</b>	0.001		Degrees C			03/27/17 17:55	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-9**

**Date Collected: 03/23/17 11:40**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-12**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.061</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:45	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:45	1
<b>Calcium</b>	<b>94.8</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:45	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:45	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:45	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:45	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:08	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:08	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:31	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:08	1
<b>Cobalt</b>	<b>0.49</b>		0.30		ug/L		03/28/17 10:33	03/29/17 00:08	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:08	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:08	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:08	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:21	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>45.1</b>		1.0		mg/L			04/07/17 14:01	2
Fluoride	ND		0.10		mg/L			04/07/17 14:01	2
<b>Sulfate</b>	<b>28.2</b>		4.0		mg/L			04/07/17 14:01	2
<b>Total Dissolved Solids</b>	<b>417</b>		10.0		mg/L			03/29/17 08:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			03/27/17 18:00	1
<b>Temperature</b>	<b>19.1</b>	<b>HF</b>	0.001		Degrees C			03/27/17 18:00	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: U-4D**  
**Date Collected: 03/21/17 12:00**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-13**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.041</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:48	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:48	1
<b>Calcium</b>	<b>87.7</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:48	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:48	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:48	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:48	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:13	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:13	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:36	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:13	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:13	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:13	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:13	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:13	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:23	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>40.8</b>		1.0		mg/L			04/07/17 14:10	2
<b>Fluoride</b>	<b>0.11</b>		0.10		mg/L			04/07/17 14:10	2
<b>Sulfate</b>	<b>32.4</b>		4.0		mg/L			04/07/17 14:10	2
<b>Total Dissolved Solids</b>	<b>429</b>		10.0		mg/L			03/26/17 08:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			03/27/17 18:03	1
<b>Temperature</b>	<b>19.0</b>	<b>HF</b>	0.001		Degrees C			03/27/17 18:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: U-4S**  
**Date Collected: 03/21/17 11:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.039</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:52	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:52	1
<b>Calcium</b>	<b>88.7</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:52	1
<b>Chromium</b>	<b>0.016</b>		0.0040		mg/L		03/27/17 09:20	03/29/17 06:52	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:52	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:52	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:19	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:19	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 02:42	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:19	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:19	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:19	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:19	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:19	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:25	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>40.0</b>		1.0		mg/L			04/07/17 14:18	2
Fluoride	ND		0.10		mg/L			04/07/17 14:18	2
<b>Sulfate</b>	<b>35.9</b>		4.0		mg/L			04/07/17 14:18	2
<b>Total Dissolved Solids</b>	<b>409</b>		10.0		mg/L			03/26/17 08:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			03/27/17 18:06	1
<b>Temperature</b>	<b>19.0</b>	<b>HF</b>	0.001		Degrees C			03/27/17 18:06	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: U-5D**  
**Date Collected: 03/21/17 14:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-15**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.055</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:55	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:55	1
<b>Calcium</b>	<b>86.5</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:55	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:55	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:55	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:55	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:24	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:24	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 14:21	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:24	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:24	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:24	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:24	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:24	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:26	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>30.3</b>		1.0		mg/L			04/07/17 14:26	2
Fluoride	ND		0.10		mg/L			04/07/17 14:26	2
<b>Sulfate</b>	<b>32.6</b>		4.0		mg/L			04/07/17 14:26	2
<b>Total Dissolved Solids</b>	<b>394</b>		10.0		mg/L			03/26/17 08:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			03/27/17 18:09	1
<b>Temperature</b>	<b>18.9</b>	<b>HF</b>	0.001		Degrees C			03/27/17 18:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: U-5S**  
**Date Collected: 03/21/17 14:20**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-16**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.060</b>		0.0020		mg/L		03/27/17 09:20	03/29/17 06:59	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 06:59	1
<b>Calcium</b>	<b>88.4</b>		0.50		mg/L		03/27/17 09:20	03/29/17 06:59	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 06:59	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 06:59	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 06:59	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:30	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:30	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 14:26	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:30	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:30	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:30	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:30	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:30	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:32	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>41.6</b>		1.0		mg/L			04/07/17 14:34	2
<b>Fluoride</b>	<b>0.11</b>		0.10		mg/L			04/07/17 14:34	2
<b>Sulfate</b>	<b>26.7</b>		4.0		mg/L			04/07/17 14:34	2
<b>Total Dissolved Solids</b>	<b>448</b>		10.0		mg/L			03/26/17 08:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			03/27/17 18:12	1
<b>Temperature</b>	<b>19.1</b>	<b>HF</b>	0.001		Degrees C			03/27/17 18:12	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: DUP-1**

**Date Collected: 03/21/17 00:00**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-17**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.060		0.0020		mg/L		03/28/17 09:20	03/28/17 22:27	1
Boron	0.021		0.020		mg/L		03/28/17 09:20	03/28/17 22:27	1
Calcium	91.3		0.50		mg/L		03/28/17 09:20	03/28/17 22:27	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 22:27	1
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 22:27	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 22:27	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:35	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:35	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 14:32	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:35	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:35	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:35	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:35	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:35	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:34	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.6		1.0		mg/L			04/07/17 14:42	2
Fluoride	0.11		0.10		mg/L			04/07/17 14:42	2
Sulfate	26.7		4.0		mg/L			04/07/17 14:42	2
Total Dissolved Solids	440		10.0		mg/L			03/26/17 08:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			03/27/17 18:14	1
Temperature	19.4	HF	0.001		Degrees C			03/27/17 18:14	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: DUP-2**

**Date Collected: 03/22/17 00:00**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-18**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.050		0.0020		mg/L		03/28/17 09:20	03/28/17 22:54	1
Boron	0.023		0.020		mg/L		03/28/17 09:20	03/28/17 22:54	1
Calcium	98.2		0.50		mg/L		03/28/17 09:20	03/28/17 22:54	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 22:54	1
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 22:54	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 22:54	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:41	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:41	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 14:55	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:41	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:41	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:41	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:41	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:41	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 12:36	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.4		1.0		mg/L			04/07/17 14:50	2
Fluoride	ND		0.10		mg/L			04/07/17 14:50	2
Sulfate	35.0		4.0		mg/L			04/07/17 14:50	2
Total Dissolved Solids	417		10.0		mg/L			03/28/17 04:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			03/27/17 18:17	1
Temperature	19.1	HF	0.001		Degrees C			03/27/17 18:17	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-115060-19**

**Date Collected: 03/21/17 15:30**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		03/28/17 09:20	03/28/17 22:58	1
Boron	ND		0.020		mg/L		03/28/17 09:20	03/28/17 22:58	1
Calcium	ND		0.50		mg/L		03/28/17 09:20	03/28/17 22:58	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 22:58	1
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 22:58	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 22:58	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:57	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:57	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 15:15	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:57	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:57	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:57	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:57	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:57	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 07:33	03/27/17 12:40	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/07/17 14:58	1
Fluoride	ND		0.050		mg/L			04/07/17 14:58	1
Sulfate	ND		2.0		mg/L			04/07/17 14:58	1
Total Dissolved Solids	ND		10.0		mg/L			03/26/17 08:47	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			03/27/17 18:20	1
Temperature	19.1	HF	0.001		Degrees C			03/27/17 18:20	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-115060-20**

**Date Collected: 03/22/17 12:30**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		03/28/17 09:20	03/28/17 23:01	1
Boron	ND		0.020		mg/L		03/28/17 09:20	03/28/17 23:01	1
Calcium	ND		0.50		mg/L		03/28/17 09:20	03/28/17 23:01	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 23:01	1
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 23:01	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 23:01	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:42	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:42	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 15:43	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 01:42	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 01:42	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:42	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:42	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 01:42	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/28/17 07:30	03/28/17 12:03	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/07/17 15:07	1
Fluoride	ND		0.050		mg/L			04/07/17 15:07	1
Sulfate	ND		2.0		mg/L			04/07/17 15:07	1
Total Dissolved Solids	ND		10.0		mg/L			03/28/17 04:46	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.8	HF	0.1		SU			03/27/17 18:23	1
Temperature	19.1	HF	0.001		Degrees C			03/27/17 18:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-115060-21**

**Date Collected: 03/23/17 13:00**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		03/28/17 09:20	03/28/17 23:05	1
Boron	ND		0.020		mg/L		03/28/17 09:20	03/28/17 23:05	1
Calcium	ND		0.50		mg/L		03/28/17 09:20	03/28/17 23:05	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 23:05	1
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 23:05	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 23:05	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:48	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/30/17 15:49	1
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 15:49	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 01:48	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/30/17 15:49	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 01:48	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/30/17 15:49	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 01:48	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 07:33	03/27/17 12:52	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/07/17 15:55	1
Fluoride	ND		0.050		mg/L			04/07/17 15:55	1
Sulfate	ND		2.0		mg/L			04/07/17 15:55	1
Total Dissolved Solids	ND		10.0		mg/L			03/29/17 08:32	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.7	HF	0.1		SU			03/27/17 18:32	1
Temperature	19.8	HF	0.001		Degrees C			03/27/17 18:32	1

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-348984/1-A**  
**Matrix: Water**  
**Analysis Batch: 349271**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 348984**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		03/27/17 09:20	03/29/17 05:24	1
Boron	ND		0.020		mg/L		03/27/17 09:20	03/29/17 05:24	1
Calcium	ND		0.50		mg/L		03/27/17 09:20	03/29/17 05:24	1
Chromium	ND		0.0040		mg/L		03/27/17 09:20	03/29/17 05:24	1
Lead	ND		0.010		mg/L		03/27/17 09:20	03/29/17 05:24	1
Lithium	ND		0.030		mg/L		03/27/17 09:20	03/29/17 05:24	1

**Lab Sample ID: LCS 480-348984/2-A**  
**Matrix: Water**  
**Analysis Batch: 349271**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 348984**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.200		mg/L		100	80 - 120
Boron	0.200	0.197		mg/L		98	80 - 120
Calcium	10.0	9.79		mg/L		98	80 - 120
Chromium	0.200	0.202		mg/L		101	80 - 120
Lead	0.200	0.201		mg/L		100	80 - 120

**Lab Sample ID: 480-115060-2 MS**  
**Matrix: Water**  
**Analysis Batch: 349271**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 348984**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.053		0.200	0.255		mg/L		101	75 - 125
Boron	0.038		0.200	0.237		mg/L		100	75 - 125
Calcium	103		10.0	115.7	4	mg/L		131	75 - 125
Chromium	ND		0.200	0.202		mg/L		101	75 - 125
Lead	ND		0.200	0.211		mg/L		103	75 - 125

**Lab Sample ID: 480-115060-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 349271**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 348984**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.053		0.200	0.252		mg/L		100	75 - 125	1	20
Boron	0.038		0.200	0.236		mg/L		99	75 - 125	0	20
Calcium	103		10.0	113.0	4	mg/L		103	75 - 125	2	20
Chromium	ND		0.200	0.198		mg/L		99	75 - 125	2	20
Lead	ND		0.200	0.208		mg/L		102	75 - 125	2	20

**Lab Sample ID: MB 480-349053/1-A**  
**Matrix: Water**  
**Analysis Batch: 349264**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349053**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		03/28/17 09:20	03/28/17 22:21	1
Boron	ND		0.020		mg/L		03/28/17 09:20	03/28/17 22:21	1
Calcium	ND		0.50		mg/L		03/28/17 09:20	03/28/17 22:21	1
Chromium	ND		0.0040		mg/L		03/28/17 09:20	03/28/17 22:21	1

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-349053/1-A**  
**Matrix: Water**  
**Analysis Batch: 349264**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349053**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		03/28/17 09:20	03/28/17 22:21	1
Lithium	ND		0.030		mg/L		03/28/17 09:20	03/28/17 22:21	1

**Lab Sample ID: LCS 480-349053/2-A**  
**Matrix: Water**  
**Analysis Batch: 349264**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 349053**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.198		mg/L		99	80 - 120
Boron	0.200	0.198		mg/L		99	80 - 120
Calcium	10.0	10.06		mg/L		101	80 - 120
Chromium	0.200	0.207		mg/L		103	80 - 120
Lead	0.200	0.206		mg/L		103	80 - 120

**Lab Sample ID: 480-115060-17 MS**  
**Matrix: Water**  
**Analysis Batch: 349264**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**  
**Prep Batch: 349053**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.060		0.200	0.255		mg/L		98	75 - 125
Boron	0.021		0.200	0.219		mg/L		99	75 - 125
Calcium	91.3		10.0	100.0	4	mg/L		87	75 - 125
Chromium	ND		0.200	0.206		mg/L		102	75 - 125
Lead	ND		0.200	0.212		mg/L		106	75 - 125

**Lab Sample ID: 480-115060-17 MSD**  
**Matrix: Water**  
**Analysis Batch: 349264**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**  
**Prep Batch: 349053**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.060		0.200	0.254		mg/L		97	75 - 125	0	20
Boron	0.021		0.200	0.214		mg/L		97	75 - 125	2	20
Calcium	91.3		10.0	99.93	4	mg/L		86	75 - 125	0	20
Chromium	ND		0.200	0.204		mg/L		102	75 - 125	1	20
Lead	ND		0.200	0.207		mg/L		103	75 - 125	2	20

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-349085/1-A**  
**Matrix: Water**  
**Analysis Batch: 349263**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/28/17 21:55	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/28/17 21:55	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/28/17 21:55	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/28/17 21:55	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/28/17 21:55	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/28/17 21:55	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-349085/1-A**  
**Matrix: Water**  
**Analysis Batch: 349263**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/28/17 21:55	1

**Lab Sample ID: MB 480-349085/1-A**  
**Matrix: Water**  
**Analysis Batch: 349460**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 00:40	1

**Lab Sample ID: LCS 480-349085/2-A**  
**Matrix: Water**  
**Analysis Batch: 349263**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	18.02		ug/L		90	80 - 120
Arsenic	20.0	18.38		ug/L		92	80 - 120
Cadmium	20.0	18.56		ug/L		93	80 - 120
Cobalt	20.0	18.49		ug/L		92	80 - 120
Molybdenum	20.0	19.18		ug/L		96	80 - 120
Selenium	20.0	16.78		ug/L		84	80 - 120
Thallium	20.0	18.70		ug/L		94	80 - 120

**Lab Sample ID: LCS 480-349085/2-A**  
**Matrix: Water**  
**Analysis Batch: 349460**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	19.27		ug/L		96	80 - 120

**Lab Sample ID: 480-115060-3 MS**  
**Matrix: Water**  
**Analysis Batch: 349263**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	18.39		ug/L		92	75 - 125
Arsenic	ND		20.0	19.75		ug/L		99	75 - 125
Cadmium	ND		20.0	18.12		ug/L		91	75 - 125
Cobalt	ND		20.0	18.76		ug/L		93	75 - 125
Molybdenum	ND		20.0	19.85		ug/L		98	75 - 125
Selenium	ND		20.0	18.09		ug/L		87	75 - 125
Thallium	ND		20.0	18.91		ug/L		95	75 - 125

**Lab Sample ID: 480-115060-3 MS**  
**Matrix: Water**  
**Analysis Batch: 349460**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**  
**Prep Batch: 349085**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	ND		20.0	20.02		ug/L		100	75 - 125

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-115060-3 MSD**

**Matrix: Water**

**Analysis Batch: 349263**

**Client Sample ID: D-2D**

**Prep Type: Total/NA**

**Prep Batch: 349085**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Antimony	ND		20.0	18.66		ug/L		93	75 - 125	1	20	
Arsenic	ND		20.0	19.23		ug/L		96	75 - 125	3	20	
Cadmium	ND		20.0	18.34		ug/L		92	75 - 125	1	20	
Cobalt	ND		20.0	18.24		ug/L		91	75 - 125	3	20	
Molybdenum	ND		20.0	19.45		ug/L		96	75 - 125	2	20	
Selenium	ND		20.0	17.87		ug/L		86	75 - 125	1	20	
Thallium	ND		20.0	18.65		ug/L		93	75 - 125	1	20	

**Lab Sample ID: 480-115060-3 MSD**

**Matrix: Water**

**Analysis Batch: 349460**

**Client Sample ID: D-2D**

**Prep Type: Total/NA**

**Prep Batch: 349085**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Beryllium	ND		20.0	19.30		ug/L		96	75 - 125	4	20	

**Lab Sample ID: MB 480-349089/1-A**

**Matrix: Water**

**Analysis Batch: 349262**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 349089**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:46	1
Arsenic	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:46	1
Cadmium	ND		0.50		ug/L		03/28/17 10:33	03/29/17 00:46	1
Cobalt	ND		0.30		ug/L		03/28/17 10:33	03/29/17 00:46	1
Molybdenum	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:46	1
Selenium	ND		1.0		ug/L		03/28/17 10:33	03/29/17 00:46	1
Thallium	ND		0.20		ug/L		03/28/17 10:33	03/29/17 00:46	1

**Lab Sample ID: MB 480-349089/1-A**

**Matrix: Water**

**Analysis Batch: 349721**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 349089**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	ND		0.70		ug/L		03/28/17 10:33	03/30/17 15:04	1

**Lab Sample ID: LCS 480-349089/2-A**

**Matrix: Water**

**Analysis Batch: 349262**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 349089**

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	Limits
		Added	Result					
Antimony	20.0	18.05		ug/L		90	80 - 120	
Arsenic	20.0	19.51		ug/L		98	80 - 120	
Cadmium	20.0	18.43		ug/L		92	80 - 120	
Cobalt	20.0	19.15		ug/L		96	80 - 120	
Molybdenum	20.0	20.16		ug/L		101	80 - 120	
Selenium	20.0	17.82		ug/L		89	80 - 120	
Thallium	20.0	18.96		ug/L		95	80 - 120	

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 480-349089/2-A**  
**Matrix: Water**  
**Analysis Batch: 349721**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 349089**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	21.97		ug/L		110	80 - 120

**Lab Sample ID: 480-115060-19 MS**  
**Matrix: Water**  
**Analysis Batch: 349262**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 349089**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	18.01		ug/L		90	75 - 125
Arsenic	ND		20.0	19.35		ug/L		97	75 - 125
Cadmium	ND		20.0	18.29		ug/L		91	75 - 125
Cobalt	ND		20.0	18.81		ug/L		94	75 - 125
Molybdenum	ND		20.0	19.89		ug/L		99	75 - 125
Selenium	ND		20.0	17.87		ug/L		89	75 - 125
Thallium	ND		20.0	18.94		ug/L		95	75 - 125

**Lab Sample ID: 480-115060-19 MS**  
**Matrix: Water**  
**Analysis Batch: 349721**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 349089**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	ND		20.0	21.70		ug/L		109	75 - 125

**Lab Sample ID: 480-115060-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 349262**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 349089**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	18.36		ug/L		92	75 - 125	2	20
Arsenic	ND		20.0	19.52		ug/L		98	75 - 125	1	20
Cadmium	ND		20.0	18.50		ug/L		92	75 - 125	1	20
Cobalt	ND		20.0	18.77		ug/L		94	75 - 125	0	20
Molybdenum	ND		20.0	20.26		ug/L		101	75 - 125	2	20
Selenium	ND		20.0	18.30		ug/L		92	75 - 125	2	20
Thallium	ND		20.0	19.03		ug/L		95	75 - 125	0	20

**Lab Sample ID: 480-115060-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 349721**

**Client Sample ID: FIELD BLANK 1**  
**Prep Type: Total/NA**  
**Prep Batch: 349089**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	ND		20.0	22.66		ug/L		113	75 - 125	4	20

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-348879/1-A**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 348879**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 08:15	03/27/17 11:48	1

**Lab Sample ID: LCS 480-348879/2-A**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 348879**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.80		ug/L		102	80 - 120

**Lab Sample ID: 480-115060-1 MS**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**  
**Prep Batch: 348879**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.98		ug/L		105	80 - 120

**Lab Sample ID: 480-115060-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**  
**Prep Batch: 348879**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	6.73		ug/L		101	80 - 120	4	20

**Lab Sample ID: MB 480-348880/1-A**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 348880**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/27/17 07:33	03/27/17 12:37	1

**Lab Sample ID: LCS 480-348880/2-A**  
**Matrix: Water**  
**Analysis Batch: 348973**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 348880**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.17		ug/L		92	80 - 120

**Lab Sample ID: MB 480-349029/1-A**  
**Matrix: Water**  
**Analysis Batch: 349145**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 349029**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		03/28/17 07:30	03/28/17 11:59	1

**Lab Sample ID: LCS 480-349029/2-A**  
**Matrix: Water**  
**Analysis Batch: 349145**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 349029**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.75		ug/L		101	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Lab Sample ID: LCSD 480-349029/15-A**  
**Matrix: Water**  
**Analysis Batch: 349145**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 349029**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	6.67	6.85		ug/L		103	80 - 120	1	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-350119/52**  
**Matrix: Water**  
**Analysis Batch: 350119**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/04/17 20:15	1
Fluoride	ND		0.050		mg/L			04/04/17 20:15	1
Sulfate	ND		2.0		mg/L			04/04/17 20:15	1

**Lab Sample ID: LCS 480-350119/51**  
**Matrix: Water**  
**Analysis Batch: 350119**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.95		mg/L		106	90 - 110
Fluoride	5.00	5.16		mg/L		103	90 - 110
Sulfate	50.0	52.88		mg/L		106	90 - 110

**Lab Sample ID: 480-115060-5 MS**  
**Matrix: Water**  
**Analysis Batch: 350119**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	31.3		250	290.2		mg/L		104	81 - 120
Fluoride	ND		25.0	25.51		mg/L		102	82 - 120
Sulfate	32.0		250	291.9		mg/L		104	80 - 120

**Lab Sample ID: 480-115060-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 350119**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	31.3		250	288.8		mg/L		103	81 - 120	0	20
Fluoride	ND		25.0	25.48		mg/L		102	82 - 120	0	20
Sulfate	32.0		250	291.9		mg/L		104	80 - 120	0	20

**Lab Sample ID: MB 480-350827/28**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/07/17 15:47	1
Fluoride	ND		0.050		mg/L			04/07/17 15:47	1
Sulfate	ND		2.0		mg/L			04/07/17 15:47	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 480-350827/4**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			04/07/17 12:32	1
Fluoride	ND		0.050		mg/L			04/07/17 12:32	1
Sulfate	ND		2.0		mg/L			04/07/17 12:32	1

**Lab Sample ID: LCS 480-350827/27**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.20		mg/L		104	90 - 110
Fluoride	5.00	5.15		mg/L		103	90 - 110
Sulfate	50.0	53.44		mg/L		107	90 - 110

**Lab Sample ID: LCS 480-350827/3**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.58		mg/L		103	90 - 110
Fluoride	5.00	5.06		mg/L		101	90 - 110
Sulfate	50.0	52.31		mg/L		105	90 - 110

**Lab Sample ID: 480-115060-11 MS**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	18.4		100	124.9		mg/L		107	81 - 120
Fluoride	0.10		10.0	10.57		mg/L		105	82 - 120
Sulfate	46.1		100	156.5		mg/L		110	80 - 120

**Lab Sample ID: 480-115060-11 MSD**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	18.4		100	123.1		mg/L		105	81 - 120	1	20
Fluoride	0.10		10.0	10.41		mg/L		103	82 - 120	1	20
Sulfate	46.1		100	155.9		mg/L		110	80 - 120	0	20

**Lab Sample ID: 480-115060-20 MS**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: FIELD BLANK 2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		50.0	51.93		mg/L		104	81 - 120
Fluoride	ND		5.00	5.10		mg/L		102	82 - 120
Sulfate	ND		50.0	52.89		mg/L		106	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-115060-21 MS**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: EQUIPMENT BLANK**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		50.0	52.86		mg/L		106	81 - 120
Fluoride	ND		5.00	5.31		mg/L		106	82 - 120
Sulfate	ND		50.0	54.67		mg/L		109	80 - 120

**Lab Sample ID: 480-115060-21 MSD**  
**Matrix: Water**  
**Analysis Batch: 350827**

**Client Sample ID: EQUIPMENT BLANK**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		50.0	52.18		mg/L		104	81 - 120	1	20
Fluoride	ND		5.00	5.17		mg/L		103	82 - 120	3	20
Sulfate	ND		50.0	53.53		mg/L		107	80 - 120	2	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-348856/1**  
**Matrix: Water**  
**Analysis Batch: 348856**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			03/26/17 08:47	1

**Lab Sample ID: LCS 480-348856/2**  
**Matrix: Water**  
**Analysis Batch: 348856**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	503	570.0		mg/L		113	85 - 115

**Lab Sample ID: 480-115060-13 DU**  
**Matrix: Water**  
**Analysis Batch: 348856**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	429		416.0		mg/L		3	10

**Lab Sample ID: MB 480-349025/1**  
**Matrix: Water**  
**Analysis Batch: 349025**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			03/28/17 04:46	1

**Lab Sample ID: LCS 480-349025/2**  
**Matrix: Water**  
**Analysis Batch: 349025**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	503	558.0		mg/L		111	85 - 115

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: 480-115060-1 DU**  
**Matrix: Water**  
**Analysis Batch: 349025**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	411		404.0		mg/L		2	10

**Lab Sample ID: MB 480-349244/1**  
**Matrix: Water**  
**Analysis Batch: 349244**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			03/29/17 08:32	1

**Lab Sample ID: LCS 480-349244/2**  
**Matrix: Water**  
**Analysis Batch: 349244**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	529	540.0		mg/L		102	85 - 115

**Lab Sample ID: 480-115060-21 DU**  
**Matrix: Water**  
**Analysis Batch: 349244**

**Client Sample ID: EQUIPMENT BLANK**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	ND		ND		mg/L		NC	10

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-349013/1**  
**Matrix: Water**  
**Analysis Batch: 349013**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-349013/23**  
**Matrix: Water**  
**Analysis Batch: 349013**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	99 - 101

**Lab Sample ID: 480-115060-20 DU**  
**Matrix: Water**  
**Analysis Batch: 349013**

**Client Sample ID: FIELD BLANK 2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	5.8	HF	5.7		SU		1	5
Temperature	19.1	HF	19.3		Degrees C		0.8	10

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCS 480-349190/1  
Matrix: Water  
Analysis Batch: 349190

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Metals

### Prep Batch: 348879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	7470A	
480-115060-2	D-1S	Total/NA	Water	7470A	
480-115060-3	D-2D	Total/NA	Water	7470A	
480-115060-4	D-2S	Total/NA	Water	7470A	
480-115060-5	D-3D	Total/NA	Water	7470A	
480-115060-6	D-3S	Total/NA	Water	7470A	
480-115060-7	D-4D	Total/NA	Water	7470A	
480-115060-8	D-4S	Total/NA	Water	7470A	
480-115060-9	D-5D	Total/NA	Water	7470A	
480-115060-10	D-5S2	Total/NA	Water	7470A	
480-115060-11	D-8	Total/NA	Water	7470A	
480-115060-12	D-9	Total/NA	Water	7470A	
480-115060-13	U-4D	Total/NA	Water	7470A	
480-115060-14	U-4S	Total/NA	Water	7470A	
480-115060-15	U-5D	Total/NA	Water	7470A	
480-115060-16	U-5S	Total/NA	Water	7470A	
480-115060-17	DUP-1	Total/NA	Water	7470A	
480-115060-18	DUP-2	Total/NA	Water	7470A	
MB 480-348879/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-348879/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-115060-1 MS	D-1D	Total/NA	Water	7470A	
480-115060-1 MSD	D-1D	Total/NA	Water	7470A	

### Prep Batch: 348880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-19	FIELD BLANK 1	Total/NA	Water	7470A	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	7470A	
MB 480-348880/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-348880/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 348973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	7470A	348879
480-115060-2	D-1S	Total/NA	Water	7470A	348879
480-115060-3	D-2D	Total/NA	Water	7470A	348879
480-115060-4	D-2S	Total/NA	Water	7470A	348879
480-115060-5	D-3D	Total/NA	Water	7470A	348879
480-115060-6	D-3S	Total/NA	Water	7470A	348879
480-115060-7	D-4D	Total/NA	Water	7470A	348879
480-115060-8	D-4S	Total/NA	Water	7470A	348879
480-115060-9	D-5D	Total/NA	Water	7470A	348879
480-115060-10	D-5S2	Total/NA	Water	7470A	348879
480-115060-11	D-8	Total/NA	Water	7470A	348879
480-115060-12	D-9	Total/NA	Water	7470A	348879
480-115060-13	U-4D	Total/NA	Water	7470A	348879
480-115060-14	U-4S	Total/NA	Water	7470A	348879
480-115060-15	U-5D	Total/NA	Water	7470A	348879
480-115060-16	U-5S	Total/NA	Water	7470A	348879
480-115060-17	DUP-1	Total/NA	Water	7470A	348879
480-115060-18	DUP-2	Total/NA	Water	7470A	348879
480-115060-19	FIELD BLANK 1	Total/NA	Water	7470A	348880

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Metals (Continued)

### Analysis Batch: 348973 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	7470A	348880
MB 480-348879/1-A	Method Blank	Total/NA	Water	7470A	348879
MB 480-348880/1-A	Method Blank	Total/NA	Water	7470A	348880
LCS 480-348879/2-A	Lab Control Sample	Total/NA	Water	7470A	348879
LCS 480-348880/2-A	Lab Control Sample	Total/NA	Water	7470A	348880
480-115060-1 MS	D-1D	Total/NA	Water	7470A	348879
480-115060-1 MSD	D-1D	Total/NA	Water	7470A	348879

### Prep Batch: 348984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	3005A	
480-115060-2	D-1S	Total/NA	Water	3005A	
480-115060-3	D-2D	Total/NA	Water	3005A	
480-115060-4	D-2S	Total/NA	Water	3005A	
480-115060-5	D-3D	Total/NA	Water	3005A	
480-115060-6	D-3S	Total/NA	Water	3005A	
480-115060-7	D-4D	Total/NA	Water	3005A	
480-115060-8	D-4S	Total/NA	Water	3005A	
480-115060-9	D-5D	Total/NA	Water	3005A	
480-115060-10	D-5S2	Total/NA	Water	3005A	
480-115060-11	D-8	Total/NA	Water	3005A	
480-115060-12	D-9	Total/NA	Water	3005A	
480-115060-13	U-4D	Total/NA	Water	3005A	
480-115060-14	U-4S	Total/NA	Water	3005A	
480-115060-15	U-5D	Total/NA	Water	3005A	
480-115060-16	U-5S	Total/NA	Water	3005A	
MB 480-348984/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-348984/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-115060-2 MS	D-1S	Total/NA	Water	3005A	
480-115060-2 MSD	D-1S	Total/NA	Water	3005A	

### Prep Batch: 349029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-20	FIELD BLANK 2	Total/NA	Water	7470A	
MB 480-349029/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-349029/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 480-349029/15-A	Lab Control Sample Dup	Total/NA	Water	7470A	

### Prep Batch: 349053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-17	DUP-1	Total/NA	Water	3005A	
480-115060-18	DUP-2	Total/NA	Water	3005A	
480-115060-19	FIELD BLANK 1	Total/NA	Water	3005A	
480-115060-20	FIELD BLANK 2	Total/NA	Water	3005A	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	3005A	
MB 480-349053/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-349053/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-115060-17 MS	DUP-1	Total/NA	Water	3005A	
480-115060-17 MSD	DUP-1	Total/NA	Water	3005A	

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Metals (Continued)

### Prep Batch: 349085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	3020A	
480-115060-2	D-1S	Total/NA	Water	3020A	
480-115060-3	D-2D	Total/NA	Water	3020A	
480-115060-4	D-2S	Total/NA	Water	3020A	
480-115060-5	D-3D	Total/NA	Water	3020A	
480-115060-6	D-3S	Total/NA	Water	3020A	
480-115060-7	D-4D	Total/NA	Water	3020A	
480-115060-8	D-4S	Total/NA	Water	3020A	
480-115060-9	D-5D	Total/NA	Water	3020A	
480-115060-10	D-5S2	Total/NA	Water	3020A	
480-115060-11	D-8	Total/NA	Water	3020A	
480-115060-12	D-9	Total/NA	Water	3020A	
480-115060-13	U-4D	Total/NA	Water	3020A	
480-115060-14	U-4S	Total/NA	Water	3020A	
480-115060-15	U-5D	Total/NA	Water	3020A	
480-115060-16	U-5S	Total/NA	Water	3020A	
480-115060-17	DUP-1	Total/NA	Water	3020A	
480-115060-18	DUP-2	Total/NA	Water	3020A	
MB 480-349085/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-349085/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-115060-3 MS	D-2D	Total/NA	Water	3020A	
480-115060-3 MSD	D-2D	Total/NA	Water	3020A	

### Prep Batch: 349089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-19	FIELD BLANK 1	Total/NA	Water	3020A	
480-115060-20	FIELD BLANK 2	Total/NA	Water	3020A	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	3020A	
MB 480-349089/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-349089/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-115060-19 MS	FIELD BLANK 1	Total/NA	Water	3020A	
480-115060-19 MSD	FIELD BLANK 1	Total/NA	Water	3020A	

### Analysis Batch: 349145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-20	FIELD BLANK 2	Total/NA	Water	7470A	349029
MB 480-349029/1-A	Method Blank	Total/NA	Water	7470A	349029
LCS 480-349029/2-A	Lab Control Sample	Total/NA	Water	7470A	349029
LCSD 480-349029/15-A	Lab Control Sample Dup	Total/NA	Water	7470A	349029

### Analysis Batch: 349262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-19	FIELD BLANK 1	Total/NA	Water	6020A	349089
480-115060-20	FIELD BLANK 2	Total/NA	Water	6020A	349089
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	6020A	349089
MB 480-349089/1-A	Method Blank	Total/NA	Water	6020A	349089
LCS 480-349089/2-A	Lab Control Sample	Total/NA	Water	6020A	349089
480-115060-19 MS	FIELD BLANK 1	Total/NA	Water	6020A	349089
480-115060-19 MSD	FIELD BLANK 1	Total/NA	Water	6020A	349089

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Metals (Continued)

### Analysis Batch: 349263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	6020A	349085
480-115060-2	D-1S	Total/NA	Water	6020A	349085
480-115060-3	D-2D	Total/NA	Water	6020A	349085
480-115060-4	D-2S	Total/NA	Water	6020A	349085
480-115060-5	D-3D	Total/NA	Water	6020A	349085
480-115060-6	D-3S	Total/NA	Water	6020A	349085
480-115060-7	D-4D	Total/NA	Water	6020A	349085
480-115060-8	D-4S	Total/NA	Water	6020A	349085
480-115060-9	D-5D	Total/NA	Water	6020A	349085
480-115060-10	D-5S2	Total/NA	Water	6020A	349085
480-115060-11	D-8	Total/NA	Water	6020A	349085
480-115060-12	D-9	Total/NA	Water	6020A	349085
480-115060-13	U-4D	Total/NA	Water	6020A	349085
480-115060-14	U-4S	Total/NA	Water	6020A	349085
480-115060-15	U-5D	Total/NA	Water	6020A	349085
480-115060-16	U-5S	Total/NA	Water	6020A	349085
480-115060-17	DUP-1	Total/NA	Water	6020A	349085
480-115060-18	DUP-2	Total/NA	Water	6020A	349085
MB 480-349085/1-A	Method Blank	Total/NA	Water	6020A	349085
LCS 480-349085/2-A	Lab Control Sample	Total/NA	Water	6020A	349085
480-115060-3 MS	D-2D	Total/NA	Water	6020A	349085
480-115060-3 MSD	D-2D	Total/NA	Water	6020A	349085

### Analysis Batch: 349264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-17	DUP-1	Total/NA	Water	6010C	349053
480-115060-18	DUP-2	Total/NA	Water	6010C	349053
480-115060-19	FIELD BLANK 1	Total/NA	Water	6010C	349053
480-115060-20	FIELD BLANK 2	Total/NA	Water	6010C	349053
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	6010C	349053
MB 480-349053/1-A	Method Blank	Total/NA	Water	6010C	349053
LCS 480-349053/2-A	Lab Control Sample	Total/NA	Water	6010C	349053
480-115060-17 MS	DUP-1	Total/NA	Water	6010C	349053
480-115060-17 MSD	DUP-1	Total/NA	Water	6010C	349053

### Analysis Batch: 349271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	6010C	348984
480-115060-2	D-1S	Total/NA	Water	6010C	348984
480-115060-3	D-2D	Total/NA	Water	6010C	348984
480-115060-4	D-2S	Total/NA	Water	6010C	348984
480-115060-5	D-3D	Total/NA	Water	6010C	348984
480-115060-6	D-3S	Total/NA	Water	6010C	348984
480-115060-7	D-4D	Total/NA	Water	6010C	348984
480-115060-8	D-4S	Total/NA	Water	6010C	348984
480-115060-9	D-5D	Total/NA	Water	6010C	348984
480-115060-10	D-5S2	Total/NA	Water	6010C	348984
480-115060-11	D-8	Total/NA	Water	6010C	348984
480-115060-12	D-9	Total/NA	Water	6010C	348984
480-115060-13	U-4D	Total/NA	Water	6010C	348984
480-115060-14	U-4S	Total/NA	Water	6010C	348984

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Metals (Continued)

### Analysis Batch: 349271 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-15	U-5D	Total/NA	Water	6010C	348984
480-115060-16	U-5S	Total/NA	Water	6010C	348984
MB 480-348984/1-A	Method Blank	Total/NA	Water	6010C	348984
LCS 480-348984/2-A	Lab Control Sample	Total/NA	Water	6010C	348984
480-115060-2 MS	D-1S	Total/NA	Water	6010C	348984
480-115060-2 MSD	D-1S	Total/NA	Water	6010C	348984

### Analysis Batch: 349460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	6020A	349085
480-115060-2	D-1S	Total/NA	Water	6020A	349085
480-115060-3	D-2D	Total/NA	Water	6020A	349085
480-115060-4	D-2S	Total/NA	Water	6020A	349085
480-115060-5	D-3D	Total/NA	Water	6020A	349085
480-115060-6	D-3S	Total/NA	Water	6020A	349085
480-115060-7	D-4D	Total/NA	Water	6020A	349085
480-115060-8	D-4S	Total/NA	Water	6020A	349085
480-115060-9	D-5D	Total/NA	Water	6020A	349085
480-115060-10	D-5S2	Total/NA	Water	6020A	349085
480-115060-11	D-8	Total/NA	Water	6020A	349085
480-115060-12	D-9	Total/NA	Water	6020A	349085
480-115060-13	U-4D	Total/NA	Water	6020A	349085
480-115060-14	U-4S	Total/NA	Water	6020A	349085
MB 480-349085/1-A	Method Blank	Total/NA	Water	6020A	349085
LCS 480-349085/2-A	Lab Control Sample	Total/NA	Water	6020A	349085
480-115060-3 MS	D-2D	Total/NA	Water	6020A	349085
480-115060-3 MSD	D-2D	Total/NA	Water	6020A	349085

### Analysis Batch: 349720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-15	U-5D	Total/NA	Water	6020A	349085
480-115060-16	U-5S	Total/NA	Water	6020A	349085
480-115060-17	DUP-1	Total/NA	Water	6020A	349085
480-115060-18	DUP-2	Total/NA	Water	6020A	349085

### Analysis Batch: 349721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-19	FIELD BLANK 1	Total/NA	Water	6020A	349089
480-115060-20	FIELD BLANK 2	Total/NA	Water	6020A	349089
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	6020A	349089
MB 480-349089/1-A	Method Blank	Total/NA	Water	6020A	349089
LCS 480-349089/2-A	Lab Control Sample	Total/NA	Water	6020A	349089
480-115060-19 MS	FIELD BLANK 1	Total/NA	Water	6020A	349089
480-115060-19 MSD	FIELD BLANK 1	Total/NA	Water	6020A	349089

## General Chemistry

### Analysis Batch: 348856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-13	U-4D	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## General Chemistry (Continued)

### Analysis Batch: 348856 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-14	U-4S	Total/NA	Water	SM 2540C	
480-115060-15	U-5D	Total/NA	Water	SM 2540C	
480-115060-16	U-5S	Total/NA	Water	SM 2540C	
480-115060-17	DUP-1	Total/NA	Water	SM 2540C	
480-115060-19	FIELD BLANK 1	Total/NA	Water	SM 2540C	
MB 480-348856/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-348856/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-115060-13 DU	U-4D	Total/NA	Water	SM 2540C	

### Analysis Batch: 349013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-10	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-115060-11	D-8	Total/NA	Water	SM 4500 H+ B	
480-115060-12	D-9	Total/NA	Water	SM 4500 H+ B	
480-115060-13	U-4D	Total/NA	Water	SM 4500 H+ B	
480-115060-14	U-4S	Total/NA	Water	SM 4500 H+ B	
480-115060-15	U-5D	Total/NA	Water	SM 4500 H+ B	
480-115060-16	U-5S	Total/NA	Water	SM 4500 H+ B	
480-115060-17	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-115060-18	DUP-2	Total/NA	Water	SM 4500 H+ B	
480-115060-19	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
480-115060-20	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 480-349013/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-349013/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-115060-20 DU	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 349025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	SM 2540C	
480-115060-2	D-1S	Total/NA	Water	SM 2540C	
480-115060-3	D-2D	Total/NA	Water	SM 2540C	
480-115060-4	D-2S	Total/NA	Water	SM 2540C	
480-115060-5	D-3D	Total/NA	Water	SM 2540C	
480-115060-6	D-3S	Total/NA	Water	SM 2540C	
480-115060-9	D-5D	Total/NA	Water	SM 2540C	
480-115060-10	D-5S2	Total/NA	Water	SM 2540C	
480-115060-18	DUP-2	Total/NA	Water	SM 2540C	
480-115060-20	FIELD BLANK 2	Total/NA	Water	SM 2540C	
MB 480-349025/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-349025/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-115060-1 DU	D-1D	Total/NA	Water	SM 2540C	

### Analysis Batch: 349190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	SM 4500 H+ B	
480-115060-2	D-1S	Total/NA	Water	SM 4500 H+ B	
480-115060-3	D-2D	Total/NA	Water	SM 4500 H+ B	
480-115060-4	D-2S	Total/NA	Water	SM 4500 H+ B	
480-115060-5	D-3D	Total/NA	Water	SM 4500 H+ B	
480-115060-6	D-3S	Total/NA	Water	SM 4500 H+ B	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## General Chemistry (Continued)

### Analysis Batch: 349190 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-7	D-4D	Total/NA	Water	SM 4500 H+ B	
480-115060-8	D-4S	Total/NA	Water	SM 4500 H+ B	
480-115060-9	D-5D	Total/NA	Water	SM 4500 H+ B	
LCS 480-349190/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 349244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-7	D-4D	Total/NA	Water	SM 2540C	
480-115060-8	D-4S	Total/NA	Water	SM 2540C	
480-115060-11	D-8	Total/NA	Water	SM 2540C	
480-115060-12	D-9	Total/NA	Water	SM 2540C	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-349244/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-349244/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-115060-21 DU	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	

### Analysis Batch: 350119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	300.0	
480-115060-2	D-1S	Total/NA	Water	300.0	
480-115060-3	D-2D	Total/NA	Water	300.0	
480-115060-4	D-2S	Total/NA	Water	300.0	
480-115060-5	D-3D	Total/NA	Water	300.0	
MB 480-350119/52	Method Blank	Total/NA	Water	300.0	
LCS 480-350119/51	Lab Control Sample	Total/NA	Water	300.0	
480-115060-5 MS	D-3D	Total/NA	Water	300.0	
480-115060-5 MSD	D-3D	Total/NA	Water	300.0	

### Analysis Batch: 350827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-6	D-3S	Total/NA	Water	300.0	
480-115060-7	D-4D	Total/NA	Water	300.0	
480-115060-8	D-4S	Total/NA	Water	300.0	
480-115060-9	D-5D	Total/NA	Water	300.0	
480-115060-10	D-5S2	Total/NA	Water	300.0	
480-115060-11	D-8	Total/NA	Water	300.0	
480-115060-12	D-9	Total/NA	Water	300.0	
480-115060-13	U-4D	Total/NA	Water	300.0	
480-115060-14	U-4S	Total/NA	Water	300.0	
480-115060-15	U-5D	Total/NA	Water	300.0	
480-115060-16	U-5S	Total/NA	Water	300.0	
480-115060-17	DUP-1	Total/NA	Water	300.0	
480-115060-18	DUP-2	Total/NA	Water	300.0	
480-115060-19	FIELD BLANK 1	Total/NA	Water	300.0	
480-115060-20	FIELD BLANK 2	Total/NA	Water	300.0	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	300.0	
MB 480-350827/28	Method Blank	Total/NA	Water	300.0	
MB 480-350827/4	Method Blank	Total/NA	Water	300.0	
LCS 480-350827/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-350827/3	Lab Control Sample	Total/NA	Water	300.0	
480-115060-11 MS	D-8	Total/NA	Water	300.0	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## General Chemistry (Continued)

### Analysis Batch: 350827 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-11 MSD	D-8	Total/NA	Water	300.0	
480-115060-20 MS	FIELD BLANK 2	Total/NA	Water	300.0	
480-115060-21 MS	EQUIPMENT BLANK	Total/NA	Water	300.0	
480-115060-21 MSD	EQUIPMENT BLANK	Total/NA	Water	300.0	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-1D**  
**Date Collected: 03/22/17 13:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 05:31	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 22:06	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 00:51	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 11:52	JRK	TAL BUF
Total/NA	Analysis	300.0		5	350119	04/04/17 20:31	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:42	DSC	TAL BUF

**Client Sample ID: D-1S**  
**Date Collected: 03/22/17 13:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 05:34	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 22:12	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 00:56	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:00	JRK	TAL BUF
Total/NA	Analysis	300.0		5	350119	04/04/17 20:40	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:45	DSC	TAL BUF

**Client Sample ID: D-2D**  
**Date Collected: 03/22/17 15:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:02	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 22:17	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 01:02	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:02	JRK	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: D-2D

Date Collected: 03/22/17 15:05

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	350119	04/04/17 20:48	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:48	DSC	TAL BUF

## Client Sample ID: D-2S

Date Collected: 03/22/17 14:45

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:06	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:02	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 01:29	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:03	JRK	TAL BUF
Total/NA	Analysis	300.0		5	350119	04/04/17 20:56	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:52	DSC	TAL BUF

## Client Sample ID: D-3D

Date Collected: 03/22/17 11:40

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:09	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:08	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 01:52	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:05	JRK	TAL BUF
Total/NA	Analysis	300.0		5	350119	04/04/17 21:04	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:55	DSC	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: D-3S**

**Lab Sample ID: 480-115060-6**

**Date Collected: 03/22/17 11:30**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:13	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:13	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 01:58	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:10	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 12:40	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 15:58	DSC	TAL BUF

**Client Sample ID: D-4D**

**Lab Sample ID: 480-115060-7**

**Date Collected: 03/23/17 09:15**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:16	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:19	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:03	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:12	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 12:48	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349244	03/29/17 08:32	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 16:01	DSC	TAL BUF

**Client Sample ID: D-4S**

**Lab Sample ID: 480-115060-8**

**Date Collected: 03/23/17 09:05**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:30	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:28	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:09	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:13	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 12:56	DMR	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	349244	03/29/17 08:32	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 16:04	DSC	TAL BUF

## Client Sample ID: D-5D

Lab Sample ID: 480-115060-9

Date Collected: 03/22/17 09:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:34	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:34	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:14	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:15	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 13:04	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349190	03/28/17 16:07	DSC	TAL BUF

## Client Sample ID: D-5S2

Lab Sample ID: 480-115060-10

Date Collected: 03/22/17 09:05

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:38	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:39	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:20	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:17	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 13:13	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 17:52	DSC	TAL BUF

## Client Sample ID: D-8

Lab Sample ID: 480-115060-11

Date Collected: 03/23/17 10:25

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:41	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/28/17 23:45	JRK	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: D-8

Date Collected: 03/23/17 10:25

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:25	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:20	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 13:21	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349244	03/29/17 08:32	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 17:55	DSC	TAL BUF

## Client Sample ID: D-9

Date Collected: 03/23/17 11:40

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:45	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:08	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:31	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:21	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:01	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349244	03/29/17 08:32	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:00	DSC	TAL BUF

## Client Sample ID: U-4D

Date Collected: 03/21/17 12:00

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:48	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:13	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:36	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:23	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:10	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:03	DSC	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Client Sample ID: U-4S**

**Lab Sample ID: 480-115060-14**

**Date Collected: 03/21/17 11:40**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:52	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:19	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349460	03/30/17 02:42	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:25	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:18	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:06	DSC	TAL BUF

**Client Sample ID: U-5D**

**Lab Sample ID: 480-115060-15**

**Date Collected: 03/21/17 14:40**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:55	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:24	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349720	03/30/17 14:21	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:26	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:26	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:09	DSC	TAL BUF

**Client Sample ID: U-5S**

**Lab Sample ID: 480-115060-16**

**Date Collected: 03/21/17 14:20**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			348984	03/27/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349271	03/29/17 06:59	AMH	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:30	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349720	03/30/17 14:26	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:32	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:34	DMR	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:12	DSC	TAL BUF

## Client Sample ID: DUP-1

Lab Sample ID: 480-115060-17

Date Collected: 03/21/17 00:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349053	03/28/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349264	03/28/17 22:27	SLB	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:35	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349720	03/30/17 14:32	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:34	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:42	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:14	DSC	TAL BUF

## Client Sample ID: DUP-2

Lab Sample ID: 480-115060-18

Date Collected: 03/22/17 00:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349053	03/28/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349264	03/28/17 22:54	SLB	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349263	03/29/17 00:41	JRK	TAL BUF
Total/NA	Prep	3020A			349085	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349720	03/30/17 14:55	TRB	TAL BUF
Total/NA	Prep	7470A			348879	03/27/17 08:15	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:36	JRK	TAL BUF
Total/NA	Analysis	300.0		2	350827	04/07/17 14:50	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:17	DSC	TAL BUF

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-115060-19

Date Collected: 03/21/17 15:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349053	03/28/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349264	03/28/17 22:58	SLB	TAL BUF
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349262	03/29/17 00:57	JRK	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-115060-19

Date Collected: 03/21/17 15:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349721	03/30/17 15:15	TRB	TAL BUF
Total/NA	Prep	7470A			348880	03/27/17 07:33	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:40	JRK	TAL BUF
Total/NA	Analysis	300.0		1	350827	04/07/17 14:58	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	348856	03/26/17 08:47	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:20	DSC	TAL BUF

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-115060-20

Date Collected: 03/22/17 12:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349053	03/28/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349264	03/28/17 23:01	SLB	TAL BUF
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349262	03/29/17 01:42	JRK	TAL BUF
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349721	03/30/17 15:43	TRB	TAL BUF
Total/NA	Prep	7470A			349029	03/28/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	349145	03/28/17 12:03	JRK	TAL BUF
Total/NA	Analysis	300.0		1	350827	04/07/17 15:07	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349025	03/28/17 04:46	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:23	DSC	TAL BUF

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-115060-21

Date Collected: 03/23/17 13:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			349053	03/28/17 09:20	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	349264	03/28/17 23:05	SLB	TAL BUF
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349262	03/29/17 01:48	JRK	TAL BUF
Total/NA	Prep	3020A			349089	03/28/17 10:33	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	349721	03/30/17 15:49	TRB	TAL BUF
Total/NA	Prep	7470A			348880	03/27/17 07:33	JRK	TAL BUF
Total/NA	Analysis	7470A		1	348973	03/27/17 12:52	JRK	TAL BUF
Total/NA	Analysis	300.0		1	350827	04/07/17 15:55	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	349244	03/29/17 08:32	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	349013	03/27/17 18:32	DSC	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-115060-1	D-1D	Water	03/22/17 13:30	03/24/17 09:30
480-115060-2	D-1S	Water	03/22/17 13:05	03/24/17 09:30
480-115060-3	D-2D	Water	03/22/17 15:05	03/24/17 09:30
480-115060-4	D-2S	Water	03/22/17 14:45	03/24/17 09:30
480-115060-5	D-3D	Water	03/22/17 11:40	03/24/17 09:30
480-115060-6	D-3S	Water	03/22/17 11:30	03/24/17 09:30
480-115060-7	D-4D	Water	03/23/17 09:15	03/24/17 09:30
480-115060-8	D-4S	Water	03/23/17 09:05	03/24/17 09:30
480-115060-9	D-5D	Water	03/22/17 09:30	03/24/17 09:30
480-115060-10	D-5S2	Water	03/22/17 09:05	03/24/17 09:30
480-115060-11	D-8	Water	03/23/17 10:25	03/24/17 09:30
480-115060-12	D-9	Water	03/23/17 11:40	03/24/17 09:30
480-115060-13	U-4D	Water	03/21/17 12:00	03/24/17 09:30
480-115060-14	U-4S	Water	03/21/17 11:40	03/24/17 09:30
480-115060-15	U-5D	Water	03/21/17 14:40	03/24/17 09:30
480-115060-16	U-5S	Water	03/21/17 14:20	03/24/17 09:30
480-115060-17	DUP-1	Water	03/21/17 00:00	03/24/17 09:30
480-115060-18	DUP-2	Water	03/22/17 00:00	03/24/17 09:30
480-115060-19	FIELD BLANK 1	Water	03/21/17 15:30	03/24/17 09:30
480-115060-20	FIELD BLANK 2	Water	03/22/17 12:30	03/24/17 09:30
480-115060-21	EQUIPMENT BLANK	Water	03/23/17 13:00	03/24/17 09:30

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Ryan Van Dette  
Site Contact: Nathaniel Beineman Date: 3/23/17  
Carrier: 101

SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 2  
Site:  
P O # 3063-17-00427

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time							Sample Specific Notes:	
						Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride
D-15	3/22/17	13:05	Grab	Water	5	X	X	X	X	X	X	X	X	
D-1D	3/22/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	X	
D-25	3/22/17	14:45	Grab	Water	5	X	X	X	X	X	X	X	X	
D-2D	3/22/17	15:05	Grab	Water	5	X	X	X	X	X	X	X	X	
D-35	3/22/17	11:30	Grab	Water	5	X	X	X	X	X	X	X	X	
D-3D	3/22/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	
D-45	3/22/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	X	
D-4D	3/23/17	9:15	Grab	Water	5	X	X	X	X	X	X	X	X	
D-55Z	3/22/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	X	
D-5D	3/22/17	9:30	Grab	Water	5	X	X	X	X	X	X	X	X	
D-8	3/23/17	10:25	Grab	Water	5	X	X	X	X	X	X	X	X	
D-9	3/23/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown   
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seal No.:  
 Relinquished by: *Matt Schlegel*  
 Relinquished by: *DA*  
 Relinquished by:

Received by: *AKS*  
 Received by: *PA*  
 Received in Laboratory by: *CAW*

Company: *GA*  
 Company: *GA*  
 Company: *GA*

Therm ID No. 50  
 Date/Time: 3-23  
 Date/Time: 3/23/17 09:30

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

**Regulatory Program:**  DW  NPDES  RCRA  Other: \_\_\_\_\_  
**Project Manager:** Ryan Van Dette  
**Site Contact:** Nathaniel Beineman Date: 3/23/17  
**Tel/Fax:** \_\_\_\_\_ **Carrier:** \_\_\_\_\_

**Cifent Contact**  
 SKB Environmental  
 13425 Courthouse Blvd  
 Rosemount, MN 55068  
 Phone (651) 438-1500  
 FAX (651) 438-1549  
 Project Name: RSMNT 2017 CCR GW Event 2  
 Site: \_\_\_\_\_  
 P O # 3063-17-00427

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:							Sample Specific Notes:	
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride
U-43	3/21/17	11:40	Grab	Water	5	X	X	X	X	X	X	X		
U-4D	3/21/17	12:00	Grab	Water	5	X	X	X	X	X	X	X		
U-55	3/21/17	14:20	Grab	Water	5	X	X	X	X	X	X	X		
U-5D	3/21/17	14:40	Grab	Water	5	X	X	X	X	X	X	X		
DUP-1	3/21/17	-	Grab	Water	5	X	X	X	X	X	X	X		
DUP-2	3/22/17	-	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 1	3/21/17	15:30	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 2	3/22/17	12:30	Grab	Water	5	X	X	X	X	X	X	X		
Equipment Blank	3/23/17	15:00	Grab	Water	5	X	X	X	X	X	X	X		

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other \_\_\_\_\_  
**Possible Hazard Identification:** \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown   
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Custody Seal No.:** \_\_\_\_\_  
 Relinquished by: [Signature] Yes  No   
 Relinquished by: [Signature] Company: TA Date/Time: 3-23-17 15:30  
 Relinquished by: [Signature] Company: TA Date/Time: 3-23-17 14:00  
 Relinquished by: [Signature] Company: TA Date/Time: 3/23/17

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016  
 Aff: 1.7.11-5.1.9.1.0



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-115060-1

SDG Number:

**Login Number: 115060**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-115060-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

4/27/2017 11:50:38 AM

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)



### LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

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**Job ID: 480-115060-2**

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**Laboratory: TestAmerica Buffalo**

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**Narrative**

**Job Narrative  
480-115060-2**

**Comments**

No additional comments.

**Receipt**

The samples were received on 3/24/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.5° C, 1.7° C, 1.9° C and 2.0° C.

**RAD**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-1D**

**Lab Sample ID: 480-115060-1**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-115060-2**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-115060-3**

No Detections.

**Client Sample ID: D-2S**

**Lab Sample ID: 480-115060-4**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-115060-5**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-115060-6**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-115060-7**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-115060-8**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-115060-9**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-115060-10**

No Detections.

**Client Sample ID: D-8**

**Lab Sample ID: 480-115060-11**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-115060-12**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-115060-13**

No Detections.

**Client Sample ID: U-4S**

**Lab Sample ID: 480-115060-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: U-5D**

**Lab Sample ID: 480-115060-15**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-115060-16**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-115060-17**

No Detections.

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-115060-18**

No Detections.

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-115060-19**

No Detections.

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-115060-20**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-115060-21**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-1D**  
**Date Collected: 03/22/17 13:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-1**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-7.18	U	27.1	27.1	50.0	45.6	pCi/L	04/05/17 16:15	04/26/17 14:26	1
Radium-228	-3.78	U	9.50	9.51	50.0	47.2	pCi/L	04/05/17 16:15	04/26/17 14:26	1

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# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-1S**  
**Date Collected: 03/22/17 13:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-2**  
**Matrix: Water**

## Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-16.1	U	22.8	22.9	50.0	46.3	pCi/L	03/29/17 12:27	04/21/17 11:24	1
Radium-228	14.6	U	33.5	33.6	50.0	38.7	pCi/L	03/29/17 12:27	04/21/17 11:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-2D**  
**Date Collected: 03/22/17 15:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-3**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>19.7</b>		13.4	13.6	50.0	15.1	pCi/L	03/29/17 12:27	04/19/17 21:17	1
Radium-228	2.43	U	8.64	8.64	50.0	31.6	pCi/L	03/29/17 12:27	04/19/17 21:17	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-2S**  
**Date Collected: 03/22/17 14:45**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-4**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	13.9	U	14.6	14.7	50.0	17.9	pCi/L	03/29/17 12:27	04/20/17 09:34	1
Radium-228	1.05	U	26.4	26.4	50.0	32.2	pCi/L	03/29/17 12:27	04/20/17 09:34	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-3D**  
**Date Collected: 03/22/17 11:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-5**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>20.2</b>		13.1	13.3	50.0	18.0	pCi/L	03/29/17 12:27	04/20/17 09:35	1
Radium-228	-2.44	U	25.5	25.5	50.0	29.1	pCi/L	03/29/17 12:27	04/20/17 09:35	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-3S**  
**Date Collected: 03/22/17 11:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-6**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-7.20	U	18.8	18.8	50.0	31.9	pCi/L	03/29/17 12:27	04/19/17 19:14	1
Radium-228	11.3	U	17.2	17.2	50.0	25.0	pCi/L	03/29/17 12:27	04/19/17 19:14	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-4D**  
**Date Collected: 03/23/17 09:15**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-7**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>29.2</b>		20.0	20.3	50.0	21.0	pCi/L	03/29/17 12:27	04/20/17 09:37	1
Radium-228	11.3	U	27.1	27.1	50.0	44.5	pCi/L	03/29/17 12:27	04/20/17 09:37	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-4S**  
**Date Collected: 03/23/17 09:05**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-8**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-17.4	U	21.6	21.6	50.0	43.4	pCi/L	03/29/17 12:27	04/20/17 18:29	1
Radium-228	6.74	U	19.9	19.9	50.0	24.4	pCi/L	03/29/17 12:27	04/20/17 18:29	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-5D**  
**Date Collected: 03/22/17 09:30**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-9**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>18.7</b>		17.0	17.1	50.0	18.0	pCi/L	03/29/17 12:27	04/19/17 21:14	1
Radium-228	10.7	U	20.7	20.7	50.0	27.2	pCi/L	03/29/17 12:27	04/19/17 21:14	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-5S2**

**Date Collected: 03/22/17 09:05**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-10**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>20.6</b>		12.7	12.9	50.0	15.6	pCi/L	03/29/17 12:27	04/20/17 09:37	1
Radium-228	14.6	U	24.9	25.0	50.0	26.9	pCi/L	03/29/17 12:27	04/20/17 09:37	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-8**

**Date Collected: 03/23/17 10:25**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-11**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>21.5</b>		14.9	15.0	50.0	15.3	pCi/L	03/29/17 12:27	04/19/17 21:19	1
Radium-228	-4.67	U	22.3	22.3	50.0	28.2	pCi/L	03/29/17 12:27	04/19/17 21:19	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: D-9**

**Date Collected: 03/23/17 11:40**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-12**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	21.6		15.8	16.0	50.0	17.8	pCi/L	03/29/17 12:27	04/19/17 20:25	1
Radium-228	32.4		19.7	19.9	50.0	19.8	pCi/L	03/29/17 12:27	04/19/17 20:25	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: U-4D**  
**Date Collected: 03/21/17 12:00**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-13**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>22.6</b>		13.7	13.9	50.0	15.8	pCi/L	03/29/17 12:27	04/20/17 06:17	1
Radium-228	5.01	U	9.64	9.65	50.0	31.0	pCi/L	03/29/17 12:27	04/20/17 06:17	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: U-4S**  
**Date Collected: 03/21/17 11:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-14**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	9.49	U	14.5	14.5	50.0	18.7	pCi/L	03/29/17 12:27	04/20/17 06:17	1
Radium-228	-7.68	U	17.5	17.5	50.0	34.4	pCi/L	03/29/17 12:27	04/20/17 06:17	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: U-5D**  
**Date Collected: 03/21/17 14:40**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-15**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-13.5	U	14.5	14.5	50.0	38.5	pCi/L	03/29/17 12:27	04/20/17 11:40	1
Radium-228	5.40	U	10.3	10.3	50.0	31.0	pCi/L	03/29/17 12:27	04/20/17 11:40	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: U-5S**  
**Date Collected: 03/21/17 14:20**  
**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-16**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>37.0</b>		18.5	18.9	50.0	20.7	pCi/L	03/29/17 12:27	04/20/17 06:19	1
Radium-228	10.5	U	33.2	33.2	50.0	38.7	pCi/L	03/29/17 12:27	04/20/17 06:19	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: DUP-1**

**Date Collected: 03/21/17 00:00**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-17**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	17.2	U	13.4	13.5	50.0	19.0	pCi/L	03/29/17 12:51	04/20/17 06:20	1
Radium-228	13.5	U	15.8	15.8	50.0	21.2	pCi/L	03/29/17 12:51	04/20/17 06:20	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: DUP-2**

**Date Collected: 03/22/17 00:00**

**Date Received: 03/24/17 09:30**

**Lab Sample ID: 480-115060-18**

**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	8.12	U	13.4	13.4	50.0	17.5	pCi/L	03/29/17 12:51	04/20/17 11:43	1
Radium-228	7.35	U	22.6	22.6	50.0	27.2	pCi/L	03/29/17 12:51	04/20/17 11:43	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-115060-19**

**Date Collected: 03/21/17 15:30**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>27.8</b>		17.4	17.6	50.0	20.3	pCi/L	03/29/17 12:51	04/20/17 11:44	1
Radium-228	7.67	U	26.3	26.3	50.0	31.7	pCi/L	03/29/17 12:51	04/20/17 11:44	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-115060-20**

**Date Collected: 03/22/17 12:30**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-23.9	U	18.4	18.5	50.0	43.0	pCi/L	03/29/17 12:51	04/19/17 19:13	1
Radium-228	16.5	U	20.1	20.2	50.0	24.7	pCi/L	03/29/17 12:51	04/19/17 19:13	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-115060-21**

**Date Collected: 03/23/17 13:00**

**Matrix: Water**

**Date Received: 03/24/17 09:30**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-16.1	U	22.1	22.2	50.0	47.5	pCi/L	03/29/17 12:51	04/19/17 19:10	1
Radium-228	13.8	U	22.2	22.2	50.0	31.7	pCi/L	03/29/17 12:51	04/19/17 19:10	1

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

**Lab Sample ID: MB 160-300594/1-A**  
**Matrix: Water**  
**Analysis Batch: 304183**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 300594**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-23.80	U	15.8	16.0	50.0	42.1	pCi/L	03/29/17 12:27	04/19/17 18:09	1
Radium-228	14.20	U	22.6	22.6	50.0	30.7	pCi/L	03/29/17 12:27	04/19/17 18:09	1

**Lab Sample ID: LCS 160-300594/2-A**  
**Matrix: Water**  
**Analysis Batch: 304177**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 300594**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec.
				Uncert. (2σ+/-)					Limits
Americium-241	136000	132900		15400		304	pCi/L	97	90 - 111
Cesium-137	46800	46040		4610		110	pCi/L	98	90 - 111
Cobalt-60	38900	37580		3710		64.2	pCi/L	97	89 - 110

**Lab Sample ID: 480-115060-2 DU**  
**Matrix: Water**  
**Analysis Batch: 304572**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 300594**

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	-16.1	U	-15.96	U	17.8	50.0	36.1	pCi/L	0	1
Radium-228	14.6	U	6.666	U	23.3	50.0	29.4	pCi/L	0.14	1

**Lab Sample ID: MB 160-301662/1-A**  
**Matrix: Water**  
**Analysis Batch: 305711**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 301662**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-10.05	U	23.3	23.3	50.0	38.8	pCi/L	04/05/17 16:15	04/26/17 14:25	1
Radium-228	11.95	U	24.2	24.2	50.0	34.4	pCi/L	04/05/17 16:15	04/26/17 14:25	1

**Lab Sample ID: LCS 160-301662/2-A**  
**Matrix: Water**  
**Analysis Batch: 305673**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 301662**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec.
				Uncert. (2σ+/-)					Limits
Americium-241	136000	134600		15500		299	pCi/L	99	90 - 111
Cesium-137	46800	45120		4520		96.2	pCi/L	96	90 - 111
Cobalt-60	38800	36660		3620		79.1	pCi/L	94	89 - 110

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Rad

### Prep Batch: 300594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-2	D-1S	Total/NA	Water	Fill_Geo-21	
480-115060-3	D-2D	Total/NA	Water	Fill_Geo-21	
480-115060-4	D-2S	Total/NA	Water	Fill_Geo-21	
480-115060-5	D-3D	Total/NA	Water	Fill_Geo-21	
480-115060-6	D-3S	Total/NA	Water	Fill_Geo-21	
480-115060-7	D-4D	Total/NA	Water	Fill_Geo-21	
480-115060-8	D-4S	Total/NA	Water	Fill_Geo-21	
480-115060-9	D-5D	Total/NA	Water	Fill_Geo-21	
480-115060-10	D-5S2	Total/NA	Water	Fill_Geo-21	
480-115060-11	D-8	Total/NA	Water	Fill_Geo-21	
480-115060-12	D-9	Total/NA	Water	Fill_Geo-21	
480-115060-13	U-4D	Total/NA	Water	Fill_Geo-21	
480-115060-14	U-4S	Total/NA	Water	Fill_Geo-21	
480-115060-15	U-5D	Total/NA	Water	Fill_Geo-21	
480-115060-16	U-5S	Total/NA	Water	Fill_Geo-21	
480-115060-17	DUP-1	Total/NA	Water	Fill_Geo-21	
480-115060-18	DUP-2	Total/NA	Water	Fill_Geo-21	
480-115060-19	FIELD BLANK 1	Total/NA	Water	Fill_Geo-21	
480-115060-20	FIELD BLANK 2	Total/NA	Water	Fill_Geo-21	
480-115060-21	EQUIPMENT BLANK	Total/NA	Water	Fill_Geo-21	
MB 160-300594/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-300594/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
480-115060-2 DU	D-1S	Total/NA	Water	Fill_Geo-21	

### Prep Batch: 301662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-115060-1	D-1D	Total/NA	Water	Fill_Geo-21	
MB 160-301662/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-301662/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Client Sample ID: D-1D

Date Collected: 03/22/17 13:30

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			301662	04/05/17 16:15	MFM	TAL SL
Total/NA	Analysis	901.1		1	305712	04/26/17 14:26	CDR	TAL SL

## Client Sample ID: D-1S

Date Collected: 03/22/17 13:05

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304699	04/21/17 11:24	KLS	TAL SL

## Client Sample ID: D-2D

Date Collected: 03/22/17 15:05

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304179	04/19/17 21:17	KLS	TAL SL

## Client Sample ID: D-2S

Date Collected: 03/22/17 14:45

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304534	04/20/17 09:34	KLS	TAL SL

## Client Sample ID: D-3D

Date Collected: 03/22/17 11:40

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304536	04/20/17 09:35	KLS	TAL SL

## Client Sample ID: D-3S

Date Collected: 03/22/17 11:30

Date Received: 03/24/17 09:30

Lab Sample ID: 480-115060-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304173	04/19/17 19:14	KLS	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Client Sample ID: D-4D

Date Collected: 03/23/17 09:15

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304535	04/20/17 09:37	KLS	TAL SL

## Client Sample ID: D-4S

Date Collected: 03/23/17 09:05

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304534	04/20/17 18:29	KLS	TAL SL

## Client Sample ID: D-5D

Date Collected: 03/22/17 09:30

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304177	04/19/17 21:14	KLS	TAL SL

## Client Sample ID: D-5S2

Date Collected: 03/22/17 09:05

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304563	04/20/17 09:37	RTM	TAL SL

## Client Sample ID: D-8

Date Collected: 03/23/17 10:25

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304173	04/19/17 21:19	KLS	TAL SL

## Client Sample ID: D-9

Date Collected: 03/23/17 11:40

Date Received: 03/24/17 09:30

## Lab Sample ID: 480-115060-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304183	04/19/17 20:25	KLS	TAL SL

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Client Sample ID: U-4D

Lab Sample ID: 480-115060-13

Date Collected: 03/21/17 12:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304530	04/20/17 06:17	KLS	TAL SL

## Client Sample ID: U-4S

Lab Sample ID: 480-115060-14

Date Collected: 03/21/17 11:40

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304534	04/20/17 06:17	KLS	TAL SL

## Client Sample ID: U-5D

Lab Sample ID: 480-115060-15

Date Collected: 03/21/17 14:40

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304530	04/20/17 11:40	KLS	TAL SL

## Client Sample ID: U-5S

Lab Sample ID: 480-115060-16

Date Collected: 03/21/17 14:20

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:27	R1S	TAL SL
Total/NA	Analysis	901.1		1	304535	04/20/17 06:19	KLS	TAL SL

## Client Sample ID: DUP-1

Lab Sample ID: 480-115060-17

Date Collected: 03/21/17 00:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:51	R1S	TAL SL
Total/NA	Analysis	901.1		1	304536	04/20/17 06:20	KLS	TAL SL

## Client Sample ID: DUP-2

Lab Sample ID: 480-115060-18

Date Collected: 03/22/17 00:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:51	R1S	TAL SL
Total/NA	Analysis	901.1		1	304534	04/20/17 11:43	KLS	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-115060-19

Date Collected: 03/21/17 15:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:51	R1S	TAL SL
Total/NA	Analysis	901.1		1	304535	04/20/17 11:44	KLS	TAL SL

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-115060-20

Date Collected: 03/22/17 12:30

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:51	R1S	TAL SL
Total/NA	Analysis	901.1		1	304179	04/19/17 19:13	KLS	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-115060-21

Date Collected: 03/23/17 13:00

Matrix: Water

Date Received: 03/24/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			300594	03/29/17 12:51	R1S	TAL SL
Total/NA	Analysis	901.1		1	304178	04/19/17 19:10	KLS	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

## Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

## Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17 *
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-17 *
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17 *
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

Method	Method Description	Protocol	Laboratory
901.1	Radium-226 & Other Gamma Emitters (GS)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

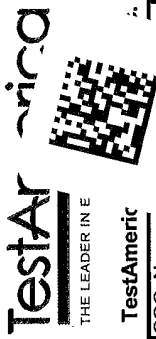


# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-115060-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-115060-1	D-1D	Water	03/22/17 13:30	03/24/17 09:30
480-115060-2	D-1S	Water	03/22/17 13:05	03/24/17 09:30
480-115060-3	D-2D	Water	03/22/17 15:05	03/24/17 09:30
480-115060-4	D-2S	Water	03/22/17 14:45	03/24/17 09:30
480-115060-5	D-3D	Water	03/22/17 11:40	03/24/17 09:30
480-115060-6	D-3S	Water	03/22/17 11:30	03/24/17 09:30
480-115060-7	D-4D	Water	03/23/17 09:15	03/24/17 09:30
480-115060-8	D-4S	Water	03/23/17 09:05	03/24/17 09:30
480-115060-9	D-5D	Water	03/22/17 09:30	03/24/17 09:30
480-115060-10	D-5S2	Water	03/22/17 09:05	03/24/17 09:30
480-115060-11	D-8	Water	03/23/17 10:25	03/24/17 09:30
480-115060-12	D-9	Water	03/23/17 11:40	03/24/17 09:30
480-115060-13	U-4D	Water	03/21/17 12:00	03/24/17 09:30
480-115060-14	U-4S	Water	03/21/17 11:40	03/24/17 09:30
480-115060-15	U-5D	Water	03/21/17 14:40	03/24/17 09:30
480-115060-16	U-5S	Water	03/21/17 14:20	03/24/17 09:30
480-115060-17	DUP-1	Water	03/21/17 00:00	03/24/17 09:30
480-115060-18	DUP-2	Water	03/22/17 00:00	03/24/17 09:30
480-115060-19	FIELD BLANK 1	Water	03/21/17 15:30	03/24/17 09:30
480-115060-20	FIELD BLANK 2	Water	03/22/17 12:30	03/24/17 09:30
480-115060-21	EQUIPMENT BLANK	Water	03/23/17 13:00	03/24/17 09:30



**Regulatory Program:**  DW  NPDES  RCRA  Other: \_\_\_\_\_

**Project Manager:** Ryan Van Dette **Site Contact:** Nathaniel Beineman **Date:** 3/23/17 **Carrier:** \_\_\_\_\_

**Client Contact:** SKB Environmental **Lab Contact:** \_\_\_\_\_

13425 Courthouse Blvd  
Rosemount, MN 55068

(651) 438-1500 Phone  
(651) 438-1549 FAX

Project Name: RSMNT 2017 CCR GW Event 2

Site: \_\_\_\_\_

P O # 3063-17-00427

**Analysis Turnaround Time**

CALENDAR DAYS WORKING DAYS

TAT if different from Below \_\_\_\_\_

2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)							Sample Specific Notes:
						Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	
D-15	3/22/17	13:05	Grab	Water	5	X	X	X	X	X	X	X	
D-1D	3/22/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	
D-25	3/22/17	14:45	Grab	Water	5	X	X	X	X	X	X	X	
D-2D	3/22/17	15:05	Grab	Water	5	X	X	X	X	X	X	X	
D-35	3/22/17	11:30	Grab	Water	5	X	X	X	X	X	X	X	
D-3D	3/22/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	
D-45	3/22/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	
D-4D	3/23/17	9:15	Grab	Water	5	X	X	X	X	X	X	X	
D-55Z	3/22/17	9:05	Grab	Water	5	X	X	X	X	X	X	X	
D-5D	3/22/17	9:30	Grab	Water	5	X	X	X	X	X	X	X	
D-8	3/23/17	10:25	Grab	Water	5	X	X	X	X	X	X	X	
D-9	3/23/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other \_\_\_\_\_

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

**Custody Seals Intact:**  Yes  No

Relinquished by: *Mindy Schlegel* **Company:** GVS **Date/Time:** 3/23/17

Relinquished by: *DPA* **Company:** 7A **Date/Time:** 3-23-17

Relinquished by: \_\_\_\_\_ **Company:** \_\_\_\_\_ **Date/Time:** \_\_\_\_\_

**Cooler Temp. (°C):** Obs'd: \_\_\_\_\_ **Therm ID No.:** 1650

**Received by:** *AKS* **Company:** TFA **Date/Time:** 3-23

**Received by:** *PAE* **Company:** \_\_\_\_\_ **Date/Time:** \_\_\_\_\_

**Received in Laboratory by:** *CAW* **Company:** TFA **Date/Time:** 3/23/17 09:30

# 1.7, 1.5, 1.9, 2.0

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_  
 Project Manager: Ryan Van Dette  
 Site Contact: Nathaniel Beineman Date: 3/23/17  
 Lab Contact: \_\_\_\_\_

Client Contact  
 SKB Environmental  
 13425 Courthouse Blvd  
 Rosemount, MN 55068  
 Phone (651) 438-1500  
 FAX (651) 438-1549  
 Project Name: RSMNT 2017 CCR GW Event 2  
 Site: \_\_\_\_\_  
 P O # 3063-17-00427

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:							Sample Specific Notes:	
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride
U-43	3/21/17	11:40	Grab	Water	5	X	X	X	X	X	X	X		
U-4D	3/21/17	12:00	Grab	Water	5	X	X	X	X	X	X	X		
U-55	3/21/17	14:20	Grab	Water	5	X	X	X	X	X	X	X		
U-5D	3/21/17	14:40	Grab	Water	5	X	X	X	X	X	X	X		
DUP-1	3/21/17	-	Grab	Water	5	X	X	X	X	X	X	X		
DUP-2	3/22/17	-	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 1	3/21/17	15:30	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 2	3/22/17	12:30	Grab	Water	5	X	X	X	X	X	X	X		
Equipment Blank	3/23/17	15:00	Grab	Water	5	X	X	X	X	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other \_\_\_\_\_  
 Possible Hazard Identification: \_\_\_\_\_  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown   
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seal No.: \_\_\_\_\_  
 Relinquished by: [Signature] Yes  No   
 Relinquished by: [Signature]  
 Relinquished by: [Signature]

Company: GES Date/Time: 3/23/17 15:30  
 Company: TA Date/Time: 3-23-17  
 Company: TA Date/Time: 3/23/17  
 Company: TA Date/Time: 3/23/17

Form No. CA-C-WI-002, Rev. 4.9, dated 2/2/2016  
 Aff: 1.7.15.1.9.1.0



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b> Client Contact: VanDette, Ryan T Shipping/Receiving: ryan.vandette@testamerica.com Company: TestAmerica Laboratories, Inc. Address: 13715 Rider Trail North, Minneapolis City: Earth City State, Zip: MO, 63045 Phone: 314-298-8566 (Tel) 314-298-8757 (Fax) Email:		Lab PM: VanDette, Ryan T E-Mail: ryan.vandette@testamerica.com Accreditations Required (See note): NELAP - Minnesota Page 1 of 2 Job #: 480-115060-1
Due Date Requested: 4/5/2017 TAT Requested (days): PO #: WO #: Project #: 48013709 SSOW#:	Analysis Requested Total Number of Containers:	
Sample Identification - Client ID (Lab ID) D-1D (480-115060-1) D-1S (480-115060-2) D-2D (480-115060-3) D-2S (480-115060-4) D-3D (480-115060-5) D-3S (480-115060-6) D-4D (480-115060-7) D-4S (480-115060-8) D-5D (480-115060-9)	Field Filtered Sample (Yes or No) Performance/MS/MSD (Yes or No) 901.1_Ra/Fill_Geo_21 Radium-226/228	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Sample Date 3/22/17 3/22/17 3/22/17 3/22/17 3/22/17 3/22/17 3/23/17 3/23/17 3/22/17	Sample Time 13:30 Central 13:05 Central 15:05 Central 14:45 Central 11:40 Central 11:30 Central 09:15 Central 09:05 Central 09:30 Central	Sample Type (C=comp, G=grab) Matrix (Water, Solid, Oil, BT=Issue, A=All) Water Water Water Water Water Water Water Water Water
Special Instructions/Note: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:		
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 Empty Kit Relinquished by:		
Relinquished by: <i>Caroline</i> Date/Time: 3/24/17 1600 Relinquished by: <i>John Clark</i> Date/Time: 3/25/17 0840 Relinquished by: _____ Date/Time: _____		





10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 691-2600 Fax (716) 691-7991

# Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Phone:	VanDette, Ryan T		480-33928.2
Shipping/Receiving			E-Mail:	State of Origin:	Page:
Company:			Ryan.vandette@testamericainc.com	Minnesota	Page 2 of 2
Address:		Due Date Requested:	Accreditations Required (See note):		
13715 Rider Trail North,		4/5/2017	NELAP - Minnesota		
City:	Earth City	TAT Requested (days):			
State, Zip:	MO, 63045				
Phone:	314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:		WO #:			
Project Name:	SKB Rosemount	Project #:	48013709		
Site:	Rosemount	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=tissue, A=air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1, Ra/Fill, Geo, 21 Radium, 226/228	Total Number of Containers	Special Instructions/Note:
D-5S2 (480-115060-10)	3/22/17	09:05 Central		Water		X	X		1	
D-8 (480-115060-11)	3/23/17	10:25 Central		Water		X	X		1	
D-9 (480-115060-12)	3/23/17	11:40 Central		Water		X	X		1	
U-4D (480-115060-13)	3/21/17	12:00 Central		Water		X	X		1	
U-4S (480-115060-14)	3/21/17	11:40 Central		Water		X	X		1	
U-5D (480-115060-15)	3/21/17	14:40 Central		Water		X	X		1	
U-5S (480-115060-16)	3/21/17	14:20 Central		Water		X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. |

<b>Possible Hazard Identification</b>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>	Date: 3/24/17	Company: TAPS	Time: 10:00
Relinquished by:	Date/Time:	Company:	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company:	Date/Time: 3-25-17
Custody Seals Intact:	Custody Seal No.:	Company: TA STR	Date/Time:
Δ Yes Δ No		Company:	Date/Time:
Cooler Temperature(s) °C and Other Remarks:			



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-115060-2

SDG Number:

**Login Number: 115060**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-115060-2

SDG Number:

**Login Number: 115060**

**List Number: 2**

**Creator: Clarke, Jill C**

**List Source: TestAmerica St. Louis**

**List Creation: 03/25/17 01:40 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	20.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-117041-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

5/11/2017 3:25:04 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Job ID: 480-117041-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-117041-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/27/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.5° C, 3.0° C and 3.6° C.

#### HPLC/IC

Method(s) 300.0: The following samples was diluted to bring the concentration of target analytes within the calibration range: U-4S (480-117041-1), U-4D (480-117041-2), U-5S (480-117041-3), U-5D (480-117041-4), D-5S2 (480-117041-5), D-5D (480-117041-6), D-3S (480-117041-7) and (480-117041-E-7 MS). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples were diluted due to the nature of the sample matrix: DUP-2 (480-117041-14), D-4S (480-117041-17), D-4D (480-117041-18), D-8 (480-117041-19) and D-9 (480-117041-20). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples were diluted due to the nature of the sample matrix: D-3D (480-117041-8), D-1S (480-117041-9), D-1D (480-117041-10), D-2S (480-117041-11), D-2D (480-117041-12) and DUP-1 (480-117041-13). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6020A: The continuing calibration verification (CCV) associated with batch 480-355131 recovered above the upper control limit for Total Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: U-5D (480-117041-4), D-5S2 (480-117041-5), D-5D (480-117041-6), D-3S (480-117041-7), D-3D (480-117041-8), D-1S (480-117041-9), D-1D (480-117041-10), D-2S (480-117041-11), D-2D (480-117041-12), DUP-1 (480-117041-13), DUP-2 (480-117041-14), FIELD BLANK 1 (480-117041-15), FIELD BLANK 2 (480-117041-16), D-4S (480-117041-17) and D-4D (480-117041-18).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: U-4S (480-117041-1), U-4D (480-117041-2), U-5S (480-117041-3), U-5D (480-117041-4), D-5S2 (480-117041-5), D-5D (480-117041-6), D-3S (480-117041-7), D-3D (480-117041-8), D-1S (480-117041-9), D-1D (480-117041-10), D-2S (480-117041-11), D-2D (480-117041-12), DUP-1 (480-117041-13), DUP-2 (480-117041-14), FIELD BLANK 1 (480-117041-15), FIELD BLANK 2 (480-117041-16), D-4S (480-117041-17), D-4D (480-117041-18), D-8 (480-117041-19), D-9 (480-117041-20) and EQUIPMENT BLANK (480-117041-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: U-4S

## Lab Sample ID: 480-117041-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	96.4		0.50		mg/L	1		6010C	Total/NA
Chromium	0.024		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.34		0.30		ug/L	1		6020A	Total/NA
Chloride	44.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	393		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-117041-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.043		0.0020		mg/L	1		6010C	Total/NA
Calcium	92.6		0.50		mg/L	1		6010C	Total/NA
Chloride	41.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	30.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	387		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-117041-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.063		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	91.7		0.50		mg/L	1		6010C	Total/NA
Chloride	46.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	26.6		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	412		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-117041-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.6		0.50		mg/L	1		6010C	Total/NA
Chloride	30.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	384		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-117041-5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-5S2 (Continued)

## Lab Sample ID: 480-117041-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.075		0.0020		mg/L	1		6010C	Total/NA
Boron	0.051		0.020		mg/L	1		6010C	Total/NA
Calcium	122		0.50		mg/L	1		6010C	Total/NA
Chloride	46.9		2.5		mg/L	5		300.0	Total/NA
Sulfate	48.9		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	500		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-117041-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Chloride	24.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	414		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-117041-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Boron	0.061		0.020		mg/L	1		6010C	Total/NA
Calcium	105		0.50		mg/L	1		6010C	Total/NA
Selenium	1.2		1.0		ug/L	1		6020A	Total/NA
Chloride	59.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	41.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	431		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-117041-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chloride	33.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.6		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	410		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-1S

## Lab Sample ID: 480-117041-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Boron	0.038		0.020		mg/L	1		6010C	Total/NA
Calcium	107		0.50		mg/L	1		6010C	Total/NA
Chloride	34.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	423		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-117041-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.8		0.50		mg/L	1		6010C	Total/NA
Chloride	42.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	391		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	8.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-117041-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	104		0.50		mg/L	1		6010C	Total/NA
Chloride	48.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	404		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-117041-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.8		0.50		mg/L	1		6010C	Total/NA
Chloride	34.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	24.6		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	376		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	20.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 480-117041-13

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: DUP-1 (Continued)

## Lab Sample ID: 480-117041-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.064		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	93.4		0.50		mg/L	1		6010C	Total/NA
Chloride	46.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	25.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	402		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-2

## Lab Sample ID: 480-117041-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chloride	33.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	423		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

## Lab Sample ID: 480-117041-15

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 2

## Lab Sample ID: 480-117041-16

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-117041-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.071		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chloride	47.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	413		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-117041-18

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-4D (Continued)

## Lab Sample ID: 480-117041-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Calcium	95.5		0.50		mg/L	1		6010C	Total/NA
Chloride	45.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	413		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-117041-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.056		0.0020		mg/L	1		6010C	Total/NA
Calcium	75.3		0.50		mg/L	1		6010C	Total/NA
Chloride	17.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	41.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	344		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	8.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-117041-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.064		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	99.0		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.80		0.30		ug/L	1		6020A	Total/NA
Chloride	46.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	410		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	8.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-117041-21

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: U-4S**  
**Date Collected: 04/24/17 10:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 01:24	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 01:24	1
<b>Calcium</b>	<b>96.4</b>		0.50		mg/L		04/28/17 09:37	04/29/17 01:24	1
<b>Chromium</b>	<b>0.024</b>		0.0040		mg/L		04/28/17 09:37	04/29/17 01:24	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 01:24	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 01:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:34	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:34	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 18:34	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 18:34	1
<b>Cobalt</b>	<b>0.34</b>		0.30		ug/L		04/28/17 10:53	05/01/17 18:34	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:34	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:34	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 18:34	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:38	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>44.7</b>		2.5		mg/L			05/09/17 03:49	5
Fluoride	ND		0.25		mg/L			05/09/17 03:49	5
<b>Sulfate</b>	<b>33.4</b>		10.0		mg/L			05/09/17 03:49	5
<b>Total Dissolved Solids</b>	<b>393</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			05/03/17 18:11	1
<b>Temperature</b>	<b>19.3</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:11	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: U-4D**  
**Date Collected: 04/24/17 11:00**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.043</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 01:52	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 01:52	1
<b>Calcium</b>	<b>92.6</b>		0.50		mg/L		04/28/17 09:37	04/29/17 01:52	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 01:52	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 01:52	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 01:52	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:39	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:39	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 18:39	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 18:39	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 18:39	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:39	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:39	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 18:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:50	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>41.6</b>		2.5		mg/L			05/09/17 04:04	5
Fluoride	ND		0.25		mg/L			05/09/17 04:04	5
<b>Sulfate</b>	<b>30.2</b>		10.0		mg/L			05/09/17 04:04	5
<b>Total Dissolved Solids</b>	<b>387</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			05/03/17 18:17	1
<b>Temperature</b>	<b>19.2</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:17	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: U-5S**  
**Date Collected: 04/24/17 11:40**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.063		0.0020		mg/L		04/28/17 09:37	04/29/17 01:56	1
Boron	0.021		0.020		mg/L		04/28/17 09:37	04/29/17 01:56	1
Calcium	91.7		0.50		mg/L		04/28/17 09:37	04/29/17 01:56	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 01:56	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 01:56	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 01:56	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:07	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:07	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 19:07	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:07	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:07	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:07	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:07	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:07	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:52	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.1		2.5		mg/L			05/09/17 04:18	5
Fluoride	ND		0.25		mg/L			05/09/17 04:18	5
Sulfate	26.6		10.0		mg/L			05/09/17 04:18	5
Total Dissolved Solids	412		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1		SU			05/03/17 18:19	1
Temperature	19.2	HF	0.001		Degrees C			05/03/17 18:19	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: U-5D**  
**Date Collected: 04/24/17 11:50**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.057</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 01:59	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 01:59	1
<b>Calcium</b>	<b>89.6</b>		0.50		mg/L		04/28/17 09:37	04/29/17 01:59	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 01:59	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 01:59	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 01:59	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:30	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:30	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:30	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:30	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:30	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:30	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:30	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:30	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:54	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>30.5</b>		2.5		mg/L			05/09/17 04:33	5
Fluoride	ND		0.25		mg/L			05/09/17 04:33	5
<b>Sulfate</b>	<b>31.5</b>		10.0		mg/L			05/09/17 04:33	5
<b>Total Dissolved Solids</b>	<b>384</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			05/03/17 18:22	1
<b>Temperature</b>	<b>19.6</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:22	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-5S2**  
**Date Collected: 04/24/17 12:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.075		0.0020		mg/L		04/28/17 09:37	04/29/17 02:03	1
Boron	0.051		0.020		mg/L		04/28/17 09:37	04/29/17 02:03	1
Calcium	122		0.50		mg/L		04/28/17 09:37	04/29/17 02:03	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:03	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:03	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:03	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:35	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:35	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:35	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:35	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:35	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:35	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:35	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:35	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:56	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.9		2.5		mg/L			05/09/17 04:48	5
Fluoride	ND		0.25		mg/L			05/09/17 04:48	5
Sulfate	48.9		10.0		mg/L			05/09/17 04:48	5
Total Dissolved Solids	500		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			05/03/17 18:25	1
Temperature	19.7	HF	0.001		Degrees C			05/03/17 18:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-5D**  
**Date Collected: 04/24/17 13:00**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.054</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 02:06	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 02:06	1
<b>Calcium</b>	<b>101</b>		0.50		mg/L		04/28/17 09:37	04/29/17 02:06	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:06	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:06	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:06	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:41	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:41	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:41	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:41	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:41	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:41	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:41	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:41	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:57	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>24.3</b>		2.5		mg/L			05/09/17 05:02	5
Fluoride	ND		0.25		mg/L			05/09/17 05:02	5
<b>Sulfate</b>	<b>33.2</b>		10.0		mg/L			05/09/17 05:02	5
<b>Total Dissolved Solids</b>	<b>414</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			05/03/17 18:28	1
<b>Temperature</b>	<b>19.7</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:28	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-3S**  
**Date Collected: 04/24/17 13:30**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-7**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.051		0.0020		mg/L		04/28/17 09:37	04/29/17 02:10	1
Boron	0.061		0.020		mg/L		04/28/17 09:37	04/29/17 02:10	1
Calcium	105		0.50		mg/L		04/28/17 09:37	04/29/17 02:10	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:10	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:10	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:10	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:46	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:46	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:46	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:46	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:46	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:46	1
Selenium	1.2		1.0		ug/L		04/28/17 10:53	05/01/17 19:46	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:46	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:59	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.3		2.5		mg/L			05/09/17 05:17	5
Fluoride	ND		0.25		mg/L			05/09/17 05:17	5
Sulfate	41.3		10.0		mg/L			05/09/17 05:17	5
Total Dissolved Solids	431		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			05/03/17 18:31	1
Temperature	19.3	HF	0.001		Degrees C			05/03/17 18:31	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-3D**  
**Date Collected: 04/24/17 13:40**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-8**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		04/28/17 09:37	04/29/17 02:24	1
Boron	0.023		0.020		mg/L		04/28/17 09:37	04/29/17 02:24	1
Calcium	102		0.50		mg/L		04/28/17 09:37	04/29/17 02:24	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:24	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:24	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:52	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:52	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:52	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:52	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:52	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:52	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:52	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:52	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:01	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.1		2.5		mg/L			05/09/17 16:51	5
Fluoride	ND		0.25		mg/L			05/09/17 16:51	5
Sulfate	31.6		10.0		mg/L			05/09/17 16:51	5
Total Dissolved Solids	410		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1		SU			05/03/17 18:34	1
Temperature	19.3	HF	0.001		Degrees C			05/03/17 18:34	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-1S**  
**Date Collected: 04/24/17 14:40**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.057		0.0020		mg/L		04/28/17 09:37	04/29/17 02:28	1
Boron	0.038		0.020		mg/L		04/28/17 09:37	04/29/17 02:28	1
Calcium	107		0.50		mg/L		04/28/17 09:37	04/29/17 02:28	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:28	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:28	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:28	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:57	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:57	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 19:57	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 19:57	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 19:57	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:57	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 19:57	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 19:57	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:06	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.6		2.5		mg/L			05/09/17 16:59	5
Fluoride	ND		0.25		mg/L			05/09/17 16:59	5
Sulfate	29.1		10.0		mg/L			05/09/17 16:59	5
Total Dissolved Solids	423		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			05/03/17 18:37	1
Temperature	19.3	HF	0.001		Degrees C			05/03/17 18:37	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-1D**  
**Date Collected: 04/24/17 14:50**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.051</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 02:31	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 02:31	1
<b>Calcium</b>	<b>91.8</b>		0.50		mg/L		04/28/17 09:37	04/29/17 02:31	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:31	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:31	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:31	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:03	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:03	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:03	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:03	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:03	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:03	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:03	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:03	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>42.8</b>		2.5		mg/L			05/09/17 17:07	5
Fluoride	ND		0.25		mg/L			05/09/17 17:07	5
<b>Sulfate</b>	<b>28.8</b>		10.0		mg/L			05/09/17 17:07	5
<b>Total Dissolved Solids</b>	<b>391</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>8.0</b>	<b>HF</b>	0.1		SU			05/03/17 18:40	1
<b>Temperature</b>	<b>19.1</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:40	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-2S**  
**Date Collected: 04/24/17 15:35**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		04/28/17 09:37	04/29/17 02:35	1
Boron	0.021		0.020		mg/L		04/28/17 09:37	04/29/17 02:35	1
Calcium	104		0.50		mg/L		04/28/17 09:37	04/29/17 02:35	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:35	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:35	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:35	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:08	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:08	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:08	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:08	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:08	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:08	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:08	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.8		2.5		mg/L			05/09/17 17:15	5
Fluoride	ND		0.25		mg/L			05/09/17 17:15	5
Sulfate	28.0		10.0		mg/L			05/09/17 17:15	5
Total Dissolved Solids	404		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			05/03/17 18:43	1
Temperature	19.6	HF	0.001		Degrees C			05/03/17 18:43	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-2D**  
**Date Collected: 04/24/17 15:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-12**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.052</b>		0.0020		mg/L		04/28/17 09:37	04/29/17 02:38	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 02:38	1
<b>Calcium</b>	<b>91.8</b>		0.50		mg/L		04/28/17 09:37	04/29/17 02:38	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:38	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:38	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:38	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:14	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:14	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:14	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:14	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:14	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:14	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:14	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:14	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:12	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>34.7</b>		2.5		mg/L			05/09/17 20:28	5
Fluoride	ND		0.25		mg/L			05/09/17 20:28	5
<b>Sulfate</b>	<b>24.6</b>		10.0		mg/L			05/09/17 20:28	5
<b>Total Dissolved Solids</b>	<b>376</b>		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			05/03/17 18:49	1
<b>Temperature</b>	<b>20.0</b>	<b>HF</b>	0.001		Degrees C			05/03/17 18:49	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: DUP-1**

**Date Collected: 04/24/17 00:00**

**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-13**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.064		0.0020		mg/L		04/28/17 09:37	04/29/17 02:42	1
Boron	0.020		0.020		mg/L		04/28/17 09:37	04/29/17 02:42	1
Calcium	93.4		0.50		mg/L		04/28/17 09:37	04/29/17 02:42	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:42	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:42	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:42	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:19	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:19	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:19	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:19	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:19	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:19	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:19	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:19	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:14	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.4		2.5		mg/L			05/09/17 20:36	5
Fluoride	ND		0.25		mg/L			05/09/17 20:36	5
Sulfate	25.1		10.0		mg/L			05/09/17 20:36	5
Total Dissolved Solids	402		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1		SU			05/03/17 18:52	1
Temperature	19.6	HF	0.001		Degrees C			05/03/17 18:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: DUP-2**

**Date Collected: 04/24/17 00:00**

**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-14**

**Matrix: Water**

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		04/28/17 09:37	04/29/17 02:45	1
Boron	0.022		0.020		mg/L		04/28/17 09:37	04/29/17 02:45	1
Calcium	102		0.50		mg/L		04/28/17 09:37	04/29/17 02:45	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:45	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:45	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:45	1

## Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:42	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:42	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:42	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:42	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:42	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:42	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:42	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:42	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:17	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.4		2.5		mg/L			05/09/17 15:14	5
Fluoride	ND		0.25		mg/L			05/09/17 15:14	5
Sulfate	33.3		10.0		mg/L			05/09/17 15:14	5
Total Dissolved Solids	423		10.0		mg/L			05/01/17 10:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			05/03/17 18:55	1
Temperature	19.1	HF	0.001		Degrees C			05/03/17 18:55	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-117041-15**

**Date Collected: 04/24/17 12:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		04/28/17 09:37	04/29/17 02:49	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 02:49	1
Calcium	ND		0.50		mg/L		04/28/17 09:37	04/29/17 02:49	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:49	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:49	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:49	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:48	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:48	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:48	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:48	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:48	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:48	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:48	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:48	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:18	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 15:29	1
Fluoride	ND		0.050		mg/L			05/09/17 15:29	1
Sulfate	ND		2.0		mg/L			05/09/17 15:29	1
Total Dissolved Solids	ND		10.0		mg/L			05/01/17 10:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.0	HF	0.1		SU			05/03/17 18:58	1
Temperature	19.2	HF	0.001		Degrees C			05/03/17 18:58	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-117041-16**

**Date Collected: 04/24/17 14:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		04/28/17 09:37	04/29/17 02:53	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 02:53	1
Calcium	ND		0.50		mg/L		04/28/17 09:37	04/29/17 02:53	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 02:53	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 02:53	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 02:53	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:53	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:53	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:53	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:53	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:53	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:53	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:53	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:53	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:20	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 15:43	1
Fluoride	ND		0.050		mg/L			05/09/17 15:43	1
Sulfate	ND		2.0		mg/L			05/09/17 15:43	1
Total Dissolved Solids	ND		10.0		mg/L			05/01/17 10:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.3	HF	0.1		SU			05/03/17 19:01	1
Temperature	19.2	HF	0.001		Degrees C			05/03/17 19:01	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-4S**  
**Date Collected: 04/25/17 09:35**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-17**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.071		0.0020		mg/L		04/28/17 09:37	04/29/17 08:27	1
Boron	0.020		0.020		mg/L		04/28/17 09:37	04/29/17 08:27	1
Calcium	102		0.50		mg/L		04/28/17 09:37	04/29/17 03:07	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 08:27	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 08:27	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 03:07	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:59	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:59	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 20:59	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 20:59	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 20:59	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:59	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 20:59	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 20:59	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 12:23	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.4		2.5		mg/L			05/09/17 15:58	5
Fluoride	ND		0.25		mg/L			05/09/17 15:58	5
Sulfate	31.1		10.0		mg/L			05/09/17 15:58	5
Total Dissolved Solids	413		10.0		mg/L			05/02/17 13:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1		SU			05/03/17 19:04	1
Temperature	19.6	HF	0.001		Degrees C			05/03/17 19:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-4D**  
**Date Collected: 04/25/17 09:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-18**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.062</b>		0.0020		mg/L		04/28/17 12:45	05/01/17 13:25	1
Boron	ND		0.020		mg/L		04/28/17 12:45	05/01/17 13:25	1
<b>Calcium</b>	<b>95.5</b>		0.50		mg/L		04/28/17 12:45	05/01/17 13:25	1
Chromium	ND		0.0040		mg/L		04/28/17 12:45	05/01/17 13:25	1
Lead	ND		0.010		mg/L		04/28/17 12:45	05/01/17 13:25	1
Lithium	ND		0.030		mg/L		04/28/17 12:45	05/01/17 13:25	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 21:04	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 21:04	1
Beryllium	ND	^	0.70		ug/L		04/28/17 10:53	05/01/17 21:04	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 21:04	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 21:04	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 21:04	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 21:04	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 21:04	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:26	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>45.1</b>		2.5		mg/L			05/09/17 16:13	5
Fluoride	ND		0.25		mg/L			05/09/17 16:13	5
<b>Sulfate</b>	<b>28.3</b>		10.0		mg/L			05/09/17 16:13	5
<b>Total Dissolved Solids</b>	<b>413</b>		10.0		mg/L			05/02/17 13:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			05/03/17 19:07	1
<b>Temperature</b>	<b>19.8</b>	<b>HF</b>	0.001		Degrees C			05/03/17 19:07	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-8**

**Date Collected: 04/25/17 10:15**

**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-19**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.056</b>		0.0020		mg/L		04/28/17 12:45	05/01/17 13:29	1
Boron	ND		0.020		mg/L		04/28/17 12:45	05/01/17 13:29	1
<b>Calcium</b>	<b>75.3</b>		0.50		mg/L		04/28/17 12:45	05/01/17 13:29	1
Chromium	ND		0.0040		mg/L		04/28/17 12:45	05/01/17 13:29	1
Lead	ND		0.010		mg/L		04/28/17 12:45	05/01/17 13:29	1
Lithium	ND		0.030		mg/L		04/28/17 12:45	05/01/17 13:29	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:21	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:21	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 15:21	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 15:21	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 15:21	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:21	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:21	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 15:21	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>17.8</b>		2.5		mg/L			05/09/17 16:27	5
Fluoride	ND		0.25		mg/L			05/09/17 16:27	5
<b>Sulfate</b>	<b>41.7</b>		10.0		mg/L			05/09/17 16:27	5
<b>Total Dissolved Solids</b>	<b>344</b>		10.0		mg/L			05/02/17 13:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>8.1</b>	<b>HF</b>	0.1		SU			05/03/17 19:10	1
<b>Temperature</b>	<b>19.9</b>	<b>HF</b>	0.001		Degrees C			05/03/17 19:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: D-9**

**Date Collected: 04/25/17 11:00**

**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-20**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.064		0.0020		mg/L		04/28/17 12:45	05/01/17 13:43	1
Boron	0.021		0.020		mg/L		04/28/17 12:45	05/01/17 13:43	1
Calcium	99.0		0.50		mg/L		04/28/17 12:45	05/01/17 13:43	1
Chromium	ND		0.0040		mg/L		04/28/17 12:45	05/01/17 13:43	1
Lead	ND		0.010		mg/L		04/28/17 12:45	05/01/17 13:43	1
Lithium	ND		0.030		mg/L		04/28/17 12:45	05/01/17 13:43	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:08	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:08	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 16:08	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 16:08	1
Cobalt	0.80		0.30		ug/L		04/28/17 10:53	05/01/17 16:08	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:08	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:08	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 16:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:30	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.5		2.5		mg/L			05/09/17 17:40	5
Fluoride	ND		0.25		mg/L			05/09/17 17:40	5
Sulfate	33.7		10.0		mg/L			05/09/17 17:40	5
Total Dissolved Solids	410		10.0		mg/L			05/02/17 13:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1		SU			05/03/17 19:13	1
Temperature	19.9	HF	0.001		Degrees C			05/03/17 19:13	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-117041-21**

**Date Collected: 04/25/17 11:15**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		04/28/17 12:45	05/01/17 13:47	1
Boron	ND		0.020		mg/L		04/28/17 12:45	05/01/17 13:47	1
Calcium	ND		0.50		mg/L		04/28/17 12:45	05/01/17 13:47	1
Chromium	ND		0.0040		mg/L		04/28/17 12:45	05/01/17 13:47	1
Lead	ND		0.010		mg/L		04/28/17 12:45	05/01/17 13:47	1
Lithium	ND		0.030		mg/L		04/28/17 12:45	05/01/17 13:47	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:14	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:14	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 16:14	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 16:14	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 16:14	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:14	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 16:14	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 16:14	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:33	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 17:55	1
Fluoride	ND		0.050		mg/L			05/09/17 17:55	1
Sulfate	ND		2.0		mg/L			05/09/17 17:55	1
Total Dissolved Solids	ND		10.0		mg/L			05/02/17 13:06	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.0	HF	0.1		SU			05/03/17 19:16	1
Temperature	19.7	HF	0.001		Degrees C			05/03/17 19:16	1

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-354513/1-A**  
**Matrix: Water**  
**Analysis Batch: 354754**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354513**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		04/28/17 09:37	04/29/17 01:17	1
Boron	ND		0.020		mg/L		04/28/17 09:37	04/29/17 01:17	1
Calcium	ND		0.50		mg/L		04/28/17 09:37	04/29/17 01:17	1
Chromium	ND		0.0040		mg/L		04/28/17 09:37	04/29/17 01:17	1
Lead	ND		0.010		mg/L		04/28/17 09:37	04/29/17 01:17	1
Lithium	ND		0.030		mg/L		04/28/17 09:37	04/29/17 01:17	1

**Lab Sample ID: LCS 480-354513/2-A**  
**Matrix: Water**  
**Analysis Batch: 354754**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354513**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.203		mg/L		102	80 - 120
Boron	0.200	0.200		mg/L		100	80 - 120
Calcium	10.0	9.95		mg/L		100	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Lead	0.200	0.204		mg/L		102	80 - 120

**Lab Sample ID: 480-117041-1 MS**  
**Matrix: Water**  
**Analysis Batch: 354754**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 354513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.042		0.200	0.245		mg/L		102	75 - 125
Boron	ND		0.200	0.221		mg/L		101	75 - 125
Calcium	96.4		10.0	108.0	4	mg/L		116	75 - 125
Chromium	0.024		0.200	0.228		mg/L		102	75 - 125
Lead	ND		0.200	0.213		mg/L		105	75 - 125

**Lab Sample ID: 480-117041-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 354754**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 354513**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.042		0.200	0.240		mg/L		99	75 - 125	2	20
Boron	ND		0.200	0.218		mg/L		99	75 - 125	2	20
Calcium	96.4		10.0	106.0	4	mg/L		96	75 - 125	2	20
Chromium	0.024		0.200	0.223		mg/L		100	75 - 125	2	20
Lead	ND		0.200	0.208		mg/L		103	75 - 125	2	20

**Lab Sample ID: MB 480-354622/1-A**  
**Matrix: Water**  
**Analysis Batch: 354994**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354622**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		04/28/17 12:45	05/01/17 13:15	1
Boron	ND		0.020		mg/L		04/28/17 12:45	05/01/17 13:15	1
Calcium	ND		0.50		mg/L		04/28/17 12:45	05/01/17 13:15	1
Chromium	ND		0.0040		mg/L		04/28/17 12:45	05/01/17 13:15	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-354622/1-A**  
**Matrix: Water**  
**Analysis Batch: 354994**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354622**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		04/28/17 12:45	05/01/17 13:15	1
Lithium	ND		0.030		mg/L		04/28/17 12:45	05/01/17 13:15	1

**Lab Sample ID: LCS 480-354622/2-A**  
**Matrix: Water**  
**Analysis Batch: 354994**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354622**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.199		mg/L		100	80 - 120
Boron	0.200	0.201		mg/L		101	80 - 120
Calcium	10.0	10.14		mg/L		101	80 - 120
Chromium	0.200	0.206		mg/L		103	80 - 120
Lead	0.200	0.203		mg/L		101	80 - 120

**Lab Sample ID: 480-117041-21 MS**  
**Matrix: Water**  
**Analysis Batch: 354994**

**Client Sample ID: EQUIPMENT BLANK**  
**Prep Type: Total/NA**  
**Prep Batch: 354622**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	ND		0.200	0.190		mg/L		95	75 - 125
Boron	ND		0.200	0.193		mg/L		94	75 - 125
Calcium	ND		10.0	9.32		mg/L		93	75 - 125
Chromium	ND		0.200	0.190		mg/L		95	75 - 125
Lead	ND		0.200	0.189		mg/L		94	75 - 125

**Lab Sample ID: 480-117041-21 MSD**  
**Matrix: Water**  
**Analysis Batch: 354994**

**Client Sample ID: EQUIPMENT BLANK**  
**Prep Type: Total/NA**  
**Prep Batch: 354622**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	ND		0.200	0.193		mg/L		97	75 - 125	1	20
Boron	ND		0.200	0.194		mg/L		95	75 - 125	1	20
Calcium	ND		10.0	9.35		mg/L		94	75 - 125	0	20
Chromium	ND		0.200	0.191		mg/L		96	75 - 125	1	20
Lead	ND		0.200	0.191		mg/L		95	75 - 125	1	20

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-354559/1-A**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:05	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:05	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 15:05	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 15:05	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 15:05	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:05	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-354559/1-A**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 15:05	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 15:05	1

**Lab Sample ID: LCS 480-354559/2-A**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.35		ug/L		97	80 - 120
Arsenic	20.0	19.66		ug/L		98	80 - 120
Beryllium	20.0	19.84		ug/L		99	80 - 120
Cadmium	20.0	19.74		ug/L		99	80 - 120
Cobalt	20.0	20.12		ug/L		101	80 - 120
Molybdenum	20.0	19.83		ug/L		99	80 - 120
Selenium	20.0	18.60		ug/L		93	80 - 120
Thallium	20.0	20.34		ug/L		102	80 - 120

**Lab Sample ID: LCSD 480-354559/3-A**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	20.0	19.78		ug/L		99	80 - 120	2	20
Arsenic	20.0	19.66		ug/L		98	80 - 120	0	20
Beryllium	20.0	19.71		ug/L		99	80 - 120	1	20
Cadmium	20.0	19.19		ug/L		96	80 - 120	3	20
Cobalt	20.0	19.91		ug/L		100	80 - 120	1	20
Molybdenum	20.0	19.67		ug/L		98	80 - 120	1	20
Selenium	20.0	18.80		ug/L		94	80 - 120	1	20
Thallium	20.0	20.53		ug/L		103	80 - 120	1	20

**Lab Sample ID: 480-117041-19 MS**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	20.98		ug/L		105	75 - 125
Arsenic	ND		20.0	20.15		ug/L		101	75 - 125
Beryllium	ND		20.0	19.61		ug/L		98	75 - 125
Cadmium	ND		20.0	19.59		ug/L		98	75 - 125
Cobalt	ND		20.0	19.84		ug/L		98	75 - 125
Molybdenum	ND		20.0	20.83		ug/L		101	75 - 125
Selenium	ND		20.0	18.95		ug/L		95	75 - 125
Thallium	ND		20.0	21.21		ug/L		106	75 - 125

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-117041-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 355130**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**  
**Prep Batch: 354559**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD	
Antimony	ND		20.0	19.97		ug/L		100	75 - 125	5	20
Arsenic	ND		20.0	20.27		ug/L		101	75 - 125	1	20
Beryllium	ND		20.0	19.72		ug/L		99	75 - 125	1	20
Cadmium	ND		20.0	19.01		ug/L		95	75 - 125	3	20
Cobalt	ND		20.0	19.77		ug/L		98	75 - 125	0	20
Molybdenum	ND		20.0	19.98		ug/L		97	75 - 125	4	20
Selenium	ND		20.0	18.78		ug/L		94	75 - 125	1	20
Thallium	ND		20.0	21.45		ug/L		107	75 - 125	1	20

**Lab Sample ID: MB 480-354564/1-A**  
**Matrix: Water**  
**Analysis Batch: 355131**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354564**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:23	1
Arsenic	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:23	1
Beryllium	ND		0.70		ug/L		04/28/17 10:53	05/01/17 18:23	1
Cadmium	ND		0.50		ug/L		04/28/17 10:53	05/01/17 18:23	1
Cobalt	ND		0.30		ug/L		04/28/17 10:53	05/01/17 18:23	1
Molybdenum	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:23	1
Selenium	ND		1.0		ug/L		04/28/17 10:53	05/01/17 18:23	1
Thallium	ND		0.20		ug/L		04/28/17 10:53	05/01/17 18:23	1

**Lab Sample ID: LCS 480-354564/2-A**  
**Matrix: Water**  
**Analysis Batch: 355131**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354564**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Antimony	20.0	19.14		ug/L		96	80 - 120
Arsenic	20.0	19.36		ug/L		97	80 - 120
Beryllium	20.0	21.17		ug/L		106	80 - 120
Cadmium	20.0	19.05		ug/L		95	80 - 120
Cobalt	20.0	20.61		ug/L		103	80 - 120
Molybdenum	20.0	20.16		ug/L		101	80 - 120
Selenium	20.0	18.32		ug/L		92	80 - 120
Thallium	20.0	20.35		ug/L		102	80 - 120

**Lab Sample ID: 480-117041-2 MS**  
**Matrix: Water**  
**Analysis Batch: 355131**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 354564**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Antimony	ND		20.0	20.34		ug/L		102	75 - 125
Arsenic	ND		20.0	20.50		ug/L		103	75 - 125
Beryllium	ND		20.0	21.17		ug/L		106	75 - 125
Cadmium	ND		20.0	19.74		ug/L		99	75 - 125
Cobalt	ND		20.0	19.88		ug/L		99	75 - 125
Molybdenum	ND		20.0	20.28		ug/L		99	75 - 125
Selenium	ND		20.0	20.04		ug/L		97	75 - 125

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-117041-2 MS**  
**Matrix: Water**  
**Analysis Batch: 355131**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 354564**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Thallium	ND		20.0	20.97		ug/L		105	75 - 125

**Lab Sample ID: 480-117041-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 355131**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 354564**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	20.40		ug/L		102	75 - 125	0	20
Arsenic	ND		20.0	20.11		ug/L		101	75 - 125	2	20
Beryllium	ND		20.0	20.62		ug/L		103	75 - 125	3	20
Cadmium	ND		20.0	18.98		ug/L		95	75 - 125	4	20
Cobalt	ND		20.0	19.56		ug/L		97	75 - 125	2	20
Molybdenum	ND		20.0	20.78		ug/L		102	75 - 125	2	20
Selenium	ND		20.0	19.02		ug/L		92	75 - 125	5	20
Thallium	ND		20.0	21.08		ug/L		105	75 - 125	1	20

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-354521/1-A**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354521**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:00	1

**Lab Sample ID: LCS 480-354521/2-A**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354521**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.95		ug/L		104	80 - 120

**Lab Sample ID: MB 480-354524/1-A**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 354524**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		04/28/17 08:20	04/28/17 11:34	1

**Lab Sample ID: LCS 480-354524/2-A**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 354524**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.75		ug/L		101	80 - 120

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: 480-117041-1 MS**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 354524**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.98		ug/L		105	80 - 120

**Lab Sample ID: 480-117041-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 354634**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 354524**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	6.88		ug/L		103	80 - 120	1	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-356232/28**  
**Matrix: Water**  
**Analysis Batch: 356232**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 00:39	1
Fluoride	ND		0.050		mg/L			05/09/17 00:39	1
Sulfate	ND		2.0		mg/L			05/09/17 00:39	1

**Lab Sample ID: LCS 480-356232/27**  
**Matrix: Water**  
**Analysis Batch: 356232**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chloride	50.0	52.12		mg/L		104	90 - 110
Fluoride	5.00	5.20		mg/L		104	90 - 110
Sulfate	50.0	53.11		mg/L		106	90 - 110

**Lab Sample ID: 480-117041-7 MS**  
**Matrix: Water**  
**Analysis Batch: 356232**

**Client Sample ID: D-3S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chloride	59.3		250	328.7		mg/L		108	81 - 120
Fluoride	ND		25.0	26.99		mg/L		108	82 - 120
Sulfate	41.3		250	317.7		mg/L		111	80 - 120

**Lab Sample ID: MB 480-356405/28**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 17:56	1
Fluoride	ND		0.050		mg/L			05/09/17 17:56	1
Sulfate	ND		2.0		mg/L			05/09/17 17:56	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 480-356405/4**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 14:40	1
Fluoride	ND		0.050		mg/L			05/09/17 14:40	1
Sulfate	ND		2.0		mg/L			05/09/17 14:40	1

**Lab Sample ID: LCS 480-356405/27**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.14		mg/L		104	90 - 110
Fluoride	5.00	5.06		mg/L		101	90 - 110
Sulfate	50.0	49.40		mg/L		99	90 - 110

**Lab Sample ID: LCS 480-356405/3**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.00		mg/L		104	90 - 110
Fluoride	5.00	5.08		mg/L		102	90 - 110
Sulfate	50.0	49.66		mg/L		99	90 - 110

**Lab Sample ID: 480-117041-11 MS**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	48.8		250	309.4		mg/L		104	81 - 120
Fluoride	ND		25.0	25.70		mg/L		103	82 - 120
Sulfate	28.0		250	276.5		mg/L		99	80 - 120

**Lab Sample ID: 480-117041-13 MS**  
**Matrix: Water**  
**Analysis Batch: 356405**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	46.4		250	311.3		mg/L		106	81 - 120
Fluoride	ND		25.0	26.07		mg/L		104	82 - 120
Sulfate	25.1		250	276.9		mg/L		101	80 - 120

**Lab Sample ID: MB 480-356412/4**  
**Matrix: Water**  
**Analysis Batch: 356412**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/09/17 15:00	1
Fluoride	ND		0.050		mg/L			05/09/17 15:00	1
Sulfate	ND		2.0		mg/L			05/09/17 15:00	1

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 480-356412/3**  
**Matrix: Water**  
**Analysis Batch: 356412**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.23		mg/L		104	90 - 110
Fluoride	5.00	5.18		mg/L		104	90 - 110
Sulfate	50.0	53.20		mg/L		106	90 - 110

**Lab Sample ID: 480-117041-19 MS**  
**Matrix: Water**  
**Analysis Batch: 356412**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	17.8		250	284.9		mg/L		107	81 - 120
Fluoride	ND		25.0	26.58		mg/L		106	82 - 120
Sulfate	41.7		250	312.1		mg/L		108	80 - 120

**Lab Sample ID: 480-117041-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 356412**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	17.8		250	284.2		mg/L		107	81 - 120	0	20
Fluoride	ND		25.0	26.70		mg/L		107	82 - 120	0	20
Sulfate	41.7		250	311.6		mg/L		108	80 - 120	0	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-354928/1**  
**Matrix: Water**  
**Analysis Batch: 354928**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/01/17 10:31	1

**Lab Sample ID: LCS 480-354928/2**  
**Matrix: Water**  
**Analysis Batch: 354928**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	511	491.0		mg/L		96	85 - 115

**Lab Sample ID: 480-117041-2 DU**  
**Matrix: Water**  
**Analysis Batch: 354928**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	387		392.0		mg/L		1	10

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: 480-117041-10 DU**  
**Matrix: Water**  
**Analysis Batch: 354928**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	391		397.0		mg/L		2	10

**Lab Sample ID: MB 480-355178/1**  
**Matrix: Water**  
**Analysis Batch: 355178**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/02/17 13:06	1

**Lab Sample ID: LCS 480-355178/2**  
**Matrix: Water**  
**Analysis Batch: 355178**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	531	525.0		mg/L		99	85 - 115

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-355519/23**  
**Matrix: Water**  
**Analysis Batch: 355519**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		101	99 - 101

**Lab Sample ID: LCS 480-355519/45**  
**Matrix: Water**  
**Analysis Batch: 355519**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	99 - 101

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Metals

### Prep Batch: 354513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	3005A	
480-117041-2	U-4D	Total/NA	Water	3005A	
480-117041-3	U-5S	Total/NA	Water	3005A	
480-117041-4	U-5D	Total/NA	Water	3005A	
480-117041-5	D-5S2	Total/NA	Water	3005A	
480-117041-6	D-5D	Total/NA	Water	3005A	
480-117041-7	D-3S	Total/NA	Water	3005A	
480-117041-8	D-3D	Total/NA	Water	3005A	
480-117041-9	D-1S	Total/NA	Water	3005A	
480-117041-10	D-1D	Total/NA	Water	3005A	
480-117041-11	D-2S	Total/NA	Water	3005A	
480-117041-12	D-2D	Total/NA	Water	3005A	
480-117041-13	DUP-1	Total/NA	Water	3005A	
480-117041-14	DUP-2	Total/NA	Water	3005A	
480-117041-15	FIELD BLANK 1	Total/NA	Water	3005A	
480-117041-16	FIELD BLANK 2	Total/NA	Water	3005A	
480-117041-17	D-4S	Total/NA	Water	3005A	
MB 480-354513/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-354513/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-117041-1 MS	U-4S	Total/NA	Water	3005A	
480-117041-1 MSD	U-4S	Total/NA	Water	3005A	

### Prep Batch: 354521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-18	D-4D	Total/NA	Water	7470A	
480-117041-19	D-8	Total/NA	Water	7470A	
480-117041-20	D-9	Total/NA	Water	7470A	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	7470A	
MB 480-354521/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-354521/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 354524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	7470A	
480-117041-2	U-4D	Total/NA	Water	7470A	
480-117041-3	U-5S	Total/NA	Water	7470A	
480-117041-4	U-5D	Total/NA	Water	7470A	
480-117041-5	D-5S2	Total/NA	Water	7470A	
480-117041-6	D-5D	Total/NA	Water	7470A	
480-117041-7	D-3S	Total/NA	Water	7470A	
480-117041-8	D-3D	Total/NA	Water	7470A	
480-117041-9	D-1S	Total/NA	Water	7470A	
480-117041-10	D-1D	Total/NA	Water	7470A	
480-117041-11	D-2S	Total/NA	Water	7470A	
480-117041-12	D-2D	Total/NA	Water	7470A	
480-117041-13	DUP-1	Total/NA	Water	7470A	
480-117041-14	DUP-2	Total/NA	Water	7470A	
480-117041-15	FIELD BLANK 1	Total/NA	Water	7470A	
480-117041-16	FIELD BLANK 2	Total/NA	Water	7470A	
480-117041-17	D-4S	Total/NA	Water	7470A	
MB 480-354524/1-A	Method Blank	Total/NA	Water	7470A	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Metals (Continued)

### Prep Batch: 354524 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-354524/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-117041-1 MS	U-4S	Total/NA	Water	7470A	
480-117041-1 MSD	U-4S	Total/NA	Water	7470A	

### Prep Batch: 354559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-19	D-8	Total/NA	Water	3020A	
480-117041-20	D-9	Total/NA	Water	3020A	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	3020A	
MB 480-354559/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-354559/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 480-354559/3-A	Lab Control Sample Dup	Total/NA	Water	3020A	
480-117041-19 MS	D-8	Total/NA	Water	3020A	
480-117041-19 MSD	D-8	Total/NA	Water	3020A	

### Prep Batch: 354564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	3020A	
480-117041-2	U-4D	Total/NA	Water	3020A	
480-117041-3	U-5S	Total/NA	Water	3020A	
480-117041-4	U-5D	Total/NA	Water	3020A	
480-117041-5	D-5S2	Total/NA	Water	3020A	
480-117041-6	D-5D	Total/NA	Water	3020A	
480-117041-7	D-3S	Total/NA	Water	3020A	
480-117041-8	D-3D	Total/NA	Water	3020A	
480-117041-9	D-1S	Total/NA	Water	3020A	
480-117041-10	D-1D	Total/NA	Water	3020A	
480-117041-11	D-2S	Total/NA	Water	3020A	
480-117041-12	D-2D	Total/NA	Water	3020A	
480-117041-13	DUP-1	Total/NA	Water	3020A	
480-117041-14	DUP-2	Total/NA	Water	3020A	
480-117041-15	FIELD BLANK 1	Total/NA	Water	3020A	
480-117041-16	FIELD BLANK 2	Total/NA	Water	3020A	
480-117041-17	D-4S	Total/NA	Water	3020A	
480-117041-18	D-4D	Total/NA	Water	3020A	
MB 480-354564/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-354564/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-117041-2 MS	U-4D	Total/NA	Water	3020A	
480-117041-2 MSD	U-4D	Total/NA	Water	3020A	

### Prep Batch: 354622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-18	D-4D	Total/NA	Water	3005A	
480-117041-19	D-8	Total/NA	Water	3005A	
480-117041-20	D-9	Total/NA	Water	3005A	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	3005A	
MB 480-354622/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-354622/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-117041-21 MS	EQUIPMENT BLANK	Total/NA	Water	3005A	
480-117041-21 MSD	EQUIPMENT BLANK	Total/NA	Water	3005A	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Metals (Continued)

### Analysis Batch: 354634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	7470A	354524
480-117041-2	U-4D	Total/NA	Water	7470A	354524
480-117041-3	U-5S	Total/NA	Water	7470A	354524
480-117041-4	U-5D	Total/NA	Water	7470A	354524
480-117041-5	D-5S2	Total/NA	Water	7470A	354524
480-117041-6	D-5D	Total/NA	Water	7470A	354524
480-117041-7	D-3S	Total/NA	Water	7470A	354524
480-117041-8	D-3D	Total/NA	Water	7470A	354524
480-117041-9	D-1S	Total/NA	Water	7470A	354524
480-117041-10	D-1D	Total/NA	Water	7470A	354524
480-117041-11	D-2S	Total/NA	Water	7470A	354524
480-117041-12	D-2D	Total/NA	Water	7470A	354524
480-117041-13	DUP-1	Total/NA	Water	7470A	354524
480-117041-14	DUP-2	Total/NA	Water	7470A	354524
480-117041-15	FIELD BLANK 1	Total/NA	Water	7470A	354524
480-117041-16	FIELD BLANK 2	Total/NA	Water	7470A	354524
480-117041-17	D-4S	Total/NA	Water	7470A	354524
480-117041-18	D-4D	Total/NA	Water	7470A	354521
480-117041-19	D-8	Total/NA	Water	7470A	354521
480-117041-20	D-9	Total/NA	Water	7470A	354521
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	7470A	354521
MB 480-354521/1-A	Method Blank	Total/NA	Water	7470A	354521
MB 480-354524/1-A	Method Blank	Total/NA	Water	7470A	354524
LCS 480-354521/2-A	Lab Control Sample	Total/NA	Water	7470A	354521
LCS 480-354524/2-A	Lab Control Sample	Total/NA	Water	7470A	354524
480-117041-1 MS	U-4S	Total/NA	Water	7470A	354524
480-117041-1 MSD	U-4S	Total/NA	Water	7470A	354524

### Analysis Batch: 354754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	6010C	354513
480-117041-2	U-4D	Total/NA	Water	6010C	354513
480-117041-3	U-5S	Total/NA	Water	6010C	354513
480-117041-4	U-5D	Total/NA	Water	6010C	354513
480-117041-5	D-5S2	Total/NA	Water	6010C	354513
480-117041-6	D-5D	Total/NA	Water	6010C	354513
480-117041-7	D-3S	Total/NA	Water	6010C	354513
480-117041-8	D-3D	Total/NA	Water	6010C	354513
480-117041-9	D-1S	Total/NA	Water	6010C	354513
480-117041-10	D-1D	Total/NA	Water	6010C	354513
480-117041-11	D-2S	Total/NA	Water	6010C	354513
480-117041-12	D-2D	Total/NA	Water	6010C	354513
480-117041-13	DUP-1	Total/NA	Water	6010C	354513
480-117041-14	DUP-2	Total/NA	Water	6010C	354513
480-117041-15	FIELD BLANK 1	Total/NA	Water	6010C	354513
480-117041-16	FIELD BLANK 2	Total/NA	Water	6010C	354513
480-117041-17	D-4S	Total/NA	Water	6010C	354513
MB 480-354513/1-A	Method Blank	Total/NA	Water	6010C	354513
LCS 480-354513/2-A	Lab Control Sample	Total/NA	Water	6010C	354513
480-117041-1 MS	U-4S	Total/NA	Water	6010C	354513
480-117041-1 MSD	U-4S	Total/NA	Water	6010C	354513

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Analysis Batch: 354760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-17	D-4S	Total/NA	Water	6010C	354513

## Analysis Batch: 354994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-18	D-4D	Total/NA	Water	6010C	354622
480-117041-19	D-8	Total/NA	Water	6010C	354622
480-117041-20	D-9	Total/NA	Water	6010C	354622
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	6010C	354622
MB 480-354622/1-A	Method Blank	Total/NA	Water	6010C	354622
LCS 480-354622/2-A	Lab Control Sample	Total/NA	Water	6010C	354622
480-117041-21 MS	EQUIPMENT BLANK	Total/NA	Water	6010C	354622
480-117041-21 MSD	EQUIPMENT BLANK	Total/NA	Water	6010C	354622

## Analysis Batch: 355130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-19	D-8	Total/NA	Water	6020A	354559
480-117041-20	D-9	Total/NA	Water	6020A	354559
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	6020A	354559
MB 480-354559/1-A	Method Blank	Total/NA	Water	6020A	354559
LCS 480-354559/2-A	Lab Control Sample	Total/NA	Water	6020A	354559
LCSD 480-354559/3-A	Lab Control Sample Dup	Total/NA	Water	6020A	354559
480-117041-19 MS	D-8	Total/NA	Water	6020A	354559
480-117041-19 MSD	D-8	Total/NA	Water	6020A	354559

## Analysis Batch: 355131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	6020A	354564
480-117041-2	U-4D	Total/NA	Water	6020A	354564
480-117041-3	U-5S	Total/NA	Water	6020A	354564
480-117041-4	U-5D	Total/NA	Water	6020A	354564
480-117041-5	D-5S2	Total/NA	Water	6020A	354564
480-117041-6	D-5D	Total/NA	Water	6020A	354564
480-117041-7	D-3S	Total/NA	Water	6020A	354564
480-117041-8	D-3D	Total/NA	Water	6020A	354564
480-117041-9	D-1S	Total/NA	Water	6020A	354564
480-117041-10	D-1D	Total/NA	Water	6020A	354564
480-117041-11	D-2S	Total/NA	Water	6020A	354564
480-117041-12	D-2D	Total/NA	Water	6020A	354564
480-117041-13	DUP-1	Total/NA	Water	6020A	354564
480-117041-14	DUP-2	Total/NA	Water	6020A	354564
480-117041-15	FIELD BLANK 1	Total/NA	Water	6020A	354564
480-117041-16	FIELD BLANK 2	Total/NA	Water	6020A	354564
480-117041-17	D-4S	Total/NA	Water	6020A	354564
480-117041-18	D-4D	Total/NA	Water	6020A	354564
MB 480-354564/1-A	Method Blank	Total/NA	Water	6020A	354564
LCS 480-354564/2-A	Lab Control Sample	Total/NA	Water	6020A	354564
480-117041-2 MS	U-4D	Total/NA	Water	6020A	354564
480-117041-2 MSD	U-4D	Total/NA	Water	6020A	354564

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## General Chemistry

### Analysis Batch: 354928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	SM 2540C	
480-117041-2	U-4D	Total/NA	Water	SM 2540C	
480-117041-3	U-5S	Total/NA	Water	SM 2540C	
480-117041-4	U-5D	Total/NA	Water	SM 2540C	
480-117041-5	D-5S2	Total/NA	Water	SM 2540C	
480-117041-6	D-5D	Total/NA	Water	SM 2540C	
480-117041-7	D-3S	Total/NA	Water	SM 2540C	
480-117041-8	D-3D	Total/NA	Water	SM 2540C	
480-117041-9	D-1S	Total/NA	Water	SM 2540C	
480-117041-10	D-1D	Total/NA	Water	SM 2540C	
480-117041-11	D-2S	Total/NA	Water	SM 2540C	
480-117041-12	D-2D	Total/NA	Water	SM 2540C	
480-117041-13	DUP-1	Total/NA	Water	SM 2540C	
480-117041-14	DUP-2	Total/NA	Water	SM 2540C	
480-117041-15	FIELD BLANK 1	Total/NA	Water	SM 2540C	
480-117041-16	FIELD BLANK 2	Total/NA	Water	SM 2540C	
MB 480-354928/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-354928/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-117041-2 DU	U-4D	Total/NA	Water	SM 2540C	
480-117041-10 DU	D-1D	Total/NA	Water	SM 2540C	

### Analysis Batch: 355178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-17	D-4S	Total/NA	Water	SM 2540C	
480-117041-18	D-4D	Total/NA	Water	SM 2540C	
480-117041-19	D-8	Total/NA	Water	SM 2540C	
480-117041-20	D-9	Total/NA	Water	SM 2540C	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-355178/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-355178/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 355519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	SM 4500 H+ B	
480-117041-2	U-4D	Total/NA	Water	SM 4500 H+ B	
480-117041-3	U-5S	Total/NA	Water	SM 4500 H+ B	
480-117041-4	U-5D	Total/NA	Water	SM 4500 H+ B	
480-117041-5	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-117041-6	D-5D	Total/NA	Water	SM 4500 H+ B	
480-117041-7	D-3S	Total/NA	Water	SM 4500 H+ B	
480-117041-8	D-3D	Total/NA	Water	SM 4500 H+ B	
480-117041-9	D-1S	Total/NA	Water	SM 4500 H+ B	
480-117041-10	D-1D	Total/NA	Water	SM 4500 H+ B	
480-117041-11	D-2S	Total/NA	Water	SM 4500 H+ B	
480-117041-12	D-2D	Total/NA	Water	SM 4500 H+ B	
480-117041-13	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-117041-14	DUP-2	Total/NA	Water	SM 4500 H+ B	
480-117041-15	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
480-117041-16	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	
480-117041-17	D-4S	Total/NA	Water	SM 4500 H+ B	
480-117041-18	D-4D	Total/NA	Water	SM 4500 H+ B	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## General Chemistry (Continued)

### Analysis Batch: 355519 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-19	D-8	Total/NA	Water	SM 4500 H+ B	
480-117041-20	D-9	Total/NA	Water	SM 4500 H+ B	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 480-355519/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-355519/45	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 356232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	300.0	
480-117041-2	U-4D	Total/NA	Water	300.0	
480-117041-3	U-5S	Total/NA	Water	300.0	
480-117041-4	U-5D	Total/NA	Water	300.0	
480-117041-5	D-5S2	Total/NA	Water	300.0	
480-117041-6	D-5D	Total/NA	Water	300.0	
480-117041-7	D-3S	Total/NA	Water	300.0	
MB 480-356232/28	Method Blank	Total/NA	Water	300.0	
LCS 480-356232/27	Lab Control Sample	Total/NA	Water	300.0	
480-117041-7 MS	D-3S	Total/NA	Water	300.0	

### Analysis Batch: 356405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-8	D-3D	Total/NA	Water	300.0	
480-117041-9	D-1S	Total/NA	Water	300.0	
480-117041-10	D-1D	Total/NA	Water	300.0	
480-117041-11	D-2S	Total/NA	Water	300.0	
480-117041-12	D-2D	Total/NA	Water	300.0	
480-117041-13	DUP-1	Total/NA	Water	300.0	
MB 480-356405/28	Method Blank	Total/NA	Water	300.0	
MB 480-356405/4	Method Blank	Total/NA	Water	300.0	
LCS 480-356405/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-356405/3	Lab Control Sample	Total/NA	Water	300.0	
480-117041-11 MS	D-2S	Total/NA	Water	300.0	
480-117041-13 MS	DUP-1	Total/NA	Water	300.0	

### Analysis Batch: 356412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-14	DUP-2	Total/NA	Water	300.0	
480-117041-15	FIELD BLANK 1	Total/NA	Water	300.0	
480-117041-16	FIELD BLANK 2	Total/NA	Water	300.0	
480-117041-17	D-4S	Total/NA	Water	300.0	
480-117041-18	D-4D	Total/NA	Water	300.0	
480-117041-19	D-8	Total/NA	Water	300.0	
480-117041-20	D-9	Total/NA	Water	300.0	
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	300.0	
MB 480-356412/4	Method Blank	Total/NA	Water	300.0	
LCS 480-356412/3	Lab Control Sample	Total/NA	Water	300.0	
480-117041-19 MS	D-8	Total/NA	Water	300.0	
480-117041-19 MSD	D-8	Total/NA	Water	300.0	

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# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: U-4S

Date Collected: 04/24/17 10:45

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 01:24	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 18:34	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:38	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 03:49	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:11	LED	TAL BUF

## Client Sample ID: U-4D

Date Collected: 04/24/17 11:00

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 01:52	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 18:39	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:50	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 04:04	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:17	LED	TAL BUF

## Client Sample ID: U-5S

Date Collected: 04/24/17 11:40

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 01:56	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:07	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:52	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 04:18	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:19	LED	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

**Client Sample ID: U-5D**

**Lab Sample ID: 480-117041-4**

**Date Collected: 04/24/17 11:50**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 01:59	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:30	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:54	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 04:33	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:22	LED	TAL BUF

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-117041-5**

**Date Collected: 04/24/17 12:45**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:03	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:35	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:56	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 04:48	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:25	LED	TAL BUF

**Client Sample ID: D-5D**

**Lab Sample ID: 480-117041-6**

**Date Collected: 04/24/17 13:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:06	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:41	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:57	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 05:02	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:28	LED	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-3S

Date Collected: 04/24/17 13:30

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:10	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:46	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:59	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356232	05/09/17 05:17	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:31	LED	TAL BUF

## Client Sample ID: D-3D

Date Collected: 04/24/17 13:40

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:24	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:52	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:01	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 16:51	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:34	LED	TAL BUF

## Client Sample ID: D-1S

Date Collected: 04/24/17 14:40

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:28	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 19:57	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:06	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 16:59	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:37	LED	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-1D

Date Collected: 04/24/17 14:50

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:31	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:03	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:08	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 17:07	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:40	LED	TAL BUF

## Client Sample ID: D-2S

Date Collected: 04/24/17 15:35

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:35	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:08	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:10	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 17:15	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:43	LED	TAL BUF

## Client Sample ID: D-2D

Date Collected: 04/24/17 15:45

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:38	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:14	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:12	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 20:28	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:49	LED	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: DUP-1

Lab Sample ID: 480-117041-13

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:42	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:19	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:14	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356405	05/09/17 20:36	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:52	LED	TAL BUF

## Client Sample ID: DUP-2

Lab Sample ID: 480-117041-14

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:45	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:42	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:17	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356412	05/09/17 15:14	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:55	LED	TAL BUF

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-117041-15

Date Collected: 04/24/17 12:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:49	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:48	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:18	JRK	TAL BUF
Total/NA	Analysis	300.0		1	356412	05/09/17 15:29	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 18:58	LED	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-117041-16

Date Collected: 04/24/17 14:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 02:53	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:53	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:20	JRK	TAL BUF
Total/NA	Analysis	300.0		1	356412	05/09/17 15:43	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	354928	05/01/17 10:31	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:01	LED	TAL BUF

## Client Sample ID: D-4S

Lab Sample ID: 480-117041-17

Date Collected: 04/25/17 09:35

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354754	04/29/17 03:07	SLB	TAL BUF
Total/NA	Prep	3005A			354513	04/28/17 09:37	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354760	04/29/17 08:27	SLB	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 20:59	TRB	TAL BUF
Total/NA	Prep	7470A			354524	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 12:23	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356412	05/09/17 15:58	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	355178	05/02/17 13:06	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:04	LED	TAL BUF

## Client Sample ID: D-4D

Lab Sample ID: 480-117041-18

Date Collected: 04/25/17 09:45

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354622	04/28/17 12:45	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354994	05/01/17 13:25	AMH	TAL BUF
Total/NA	Prep	3020A			354564	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355131	05/01/17 21:04	TRB	TAL BUF
Total/NA	Prep	7470A			354521	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:26	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356412	05/09/17 16:13	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	355178	05/02/17 13:06	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:07	LED	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Client Sample ID: D-8

Date Collected: 04/25/17 10:15

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354622	04/28/17 12:45	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354994	05/01/17 13:29	AMH	TAL BUF
Total/NA	Prep	3020A			354559	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355130	05/01/17 15:21	TRB	TAL BUF
Total/NA	Prep	7470A			354521	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:28	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356412	05/09/17 16:27	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	355178	05/02/17 13:06	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:10	LED	TAL BUF

## Client Sample ID: D-9

Date Collected: 04/25/17 11:00

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354622	04/28/17 12:45	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354994	05/01/17 13:43	AMH	TAL BUF
Total/NA	Prep	3020A			354559	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355130	05/01/17 16:08	TRB	TAL BUF
Total/NA	Prep	7470A			354521	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:30	JRK	TAL BUF
Total/NA	Analysis	300.0		5	356412	05/09/17 17:40	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	355178	05/02/17 13:06	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:13	LED	TAL BUF

## Client Sample ID: EQUIPMENT BLANK

Date Collected: 04/25/17 11:15

Date Received: 04/27/17 09:45

## Lab Sample ID: 480-117041-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			354622	04/28/17 12:45	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	354994	05/01/17 13:47	AMH	TAL BUF
Total/NA	Prep	3020A			354559	04/28/17 10:53	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	355130	05/01/17 16:14	TRB	TAL BUF
Total/NA	Prep	7470A			354521	04/28/17 08:20	JRK	TAL BUF
Total/NA	Analysis	7470A		1	354634	04/28/17 11:33	JRK	TAL BUF
Total/NA	Analysis	300.0		1	356412	05/09/17 17:55	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	355178	05/02/17 13:06	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	355519	05/03/17 19:16	LED	TAL BUF

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature





# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-117041-1	U-4S	Water	04/24/17 10:45	04/27/17 09:45
480-117041-2	U-4D	Water	04/24/17 11:00	04/27/17 09:45
480-117041-3	U-5S	Water	04/24/17 11:40	04/27/17 09:45
480-117041-4	U-5D	Water	04/24/17 11:50	04/27/17 09:45
480-117041-5	D-5S2	Water	04/24/17 12:45	04/27/17 09:45
480-117041-6	D-5D	Water	04/24/17 13:00	04/27/17 09:45
480-117041-7	D-3S	Water	04/24/17 13:30	04/27/17 09:45
480-117041-8	D-3D	Water	04/24/17 13:40	04/27/17 09:45
480-117041-9	D-1S	Water	04/24/17 14:40	04/27/17 09:45
480-117041-10	D-1D	Water	04/24/17 14:50	04/27/17 09:45
480-117041-11	D-2S	Water	04/24/17 15:35	04/27/17 09:45
480-117041-12	D-2D	Water	04/24/17 15:45	04/27/17 09:45
480-117041-13	DUP-1	Water	04/24/17 00:00	04/27/17 09:45
480-117041-14	DUP-2	Water	04/24/17 00:00	04/27/17 09:45
480-117041-15	FIELD BLANK 1	Water	04/24/17 12:00	04/27/17 09:45
480-117041-16	FIELD BLANK 2	Water	04/24/17 14:00	04/27/17 09:45
480-117041-17	D-4S	Water	04/25/17 09:35	04/27/17 09:45
480-117041-18	D-4D	Water	04/25/17 09:45	04/27/17 09:45
480-117041-19	D-8	Water	04/25/17 10:15	04/27/17 09:45
480-117041-20	D-9	Water	04/25/17 11:00	04/27/17 09:45
480-117041-21	EQUIPMENT BLANK	Water	04/25/17 11:15	04/27/17 09:45

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMINT 2017 CCR GW Event 3  
Site:  
P O # 3063-17-00547

**Project Manager: Ryan Van Dette**  
Tel/Fax:

**Site Contact: Nathaniel Beineman** Date: 4/24/17  
Carrier:

COC No: 1 of 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:							Sample Specific Notes:	
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride
U-45	4/24/17	10:45	Grab	Water	5	X	X	X	X	X	X	X	X	
U-4D	4/24/17	11:00	Grab	Water	5	X	X	X	X	X	X	X	X	
U-55	4/24/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	
U-5D	4/24/17	11:50	Grab	Water	5	X	X	X	X	X	X	X	X	
D-35Z	4/24/17	12:45	Grab	Water	5	X	X	X	X	X	X	X	X	
D-35D	4/24/17	13:00	Grab	Water	5	X	X	X	X	X	X	X	X	
D-35	4/24/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	X	
D-3D	4/24/17	13:40	Grab	Water	5	X	X	X	X	X	X	X	X	
D-15	4/24/17	14:40	Grab	Water	5	X	X	X	X	X	X	X	X	
D-1D	4/24/17	14:50	Grab	Water	5	X	X	X	X	X	X	X	X	
D-25	4/24/17	15:35	Grab	Water	5	X	X	X	X	X	X	X	X	
D-2D	4/24/17	15:45	Grab	Water	5	X	X	X	X	X	X	X	X	



480-117041 COC

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months  
 \*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.:	Company: <i>ES</i>	Date/Time: 4/24/17 7:00	Received by: <i>ES</i>	Company: <i>TA</i>	Date/Time: 4/26/17 1400
Relinquished by: <i>ES</i>	Company: <i>TA</i>	Date/Time: 4-26-17	Received by: <i>ES</i>	Company: <i>TA</i>	Date/Time: 4/27/17 0845
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

310 307215 61

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 3  
Site:  
P O # 3063-17-00547

Project Manager: Ryan Van Dette  
Tel/Fax: \_\_\_\_\_

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: Nathaniel Beineman Date: 4/24/17  
Lab Contact: \_\_\_\_\_ Carrier: \_\_\_\_\_

COC No: 2 of 2 COCs

Sampler: \_\_\_\_\_  
For Lab Use Only:  
Walk-in Client: \_\_\_\_\_  
Lab Sampling: \_\_\_\_\_  
Job / SDG No.: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:							Sample Specific Notes:	
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride
DVP-1	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X		
DVP-2	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 1	4/24/17	12:00	Grab	Water	5	X	X	X	X	X	X	X		
Field Blank 2	4/24/17	14:00	Grab	Water	5	X	X	X	X	X	X	X		
D-4S	4/25/17	9:35	Grab	Water	5	X	X	X	X	X	X	X		
D-4D	4/25/17	9:45	Grab	Water	5	X	X	X	X	X	X	X		
D-8	4/25/17	10:15	Grab	Water	5	X	X	X	X	X	X	X		
D-9	4/25/17	11:00	Grab	Water	5	X	X	X	X	X	X	X		
Equipment Blank	4/25/17	11:15	Grab	Water	5	X	X	X	X	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Cooler Temp. °C: Obs'd: \_\_\_\_\_ Corr'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
 Company: GFS  
 Date/Time: 4/26/17

Relinquished by: *Adam Bell*  
 Company: TA  
 Date/Time: 4-26-17

Relinquished by: *Adam*  
 Company: TA  
 Date/Time: 4-26-17

Received by: *Adam*  
 Company: TA  
 Date/Time: 4-26-17

Received in Laboratory by: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_

3.6, 3.0, 2.5



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-117041-1

SDG Number:

**Login Number: 117041**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-117041-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

5/26/2017 3:31:22 PM

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)



### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Job ID: 480-117041-2**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-117041-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/27/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.5° C, 3.0° C and 3.6° C.

#### RAD

Method(s) 901.1: Gamma Prep Batch 160-306778:

The method blank (MB), analyzed by gamma spectroscopy, radium-226 above the MDC but below the detection goal. The data have been qualified and reported. U-4S (480-117041-1), U-4D (480-117041-2), U-5S (480-117041-3), U-5D (480-117041-4), D-5S2 (480-117041-5), D-5D (480-117041-6), D-3S (480-117041-7), D-3D (480-117041-8), D-1S (480-117041-9), D-1D (480-117041-10), D-2S (480-117041-11), D-2D (480-117041-12), DUP-1 (480-117041-13), DUP-2 (480-117041-14), FIELD BLANK 1 (480-117041-15), FIELD BLANK 2 (480-117041-16), D-4S (480-117041-17), D-4D (480-117041-18), D-8 (480-117041-19), D-9 (480-117041-20), (LCS 160-306778/2-A), (MB 160-306778/1-A) and (480-117041-A-1-B DU)

Method(s) 901.1: Gamma Prep Batch 160-306778:

The following samples did not meet the radium-226/radium-228 detection goals. The samples were counted for 60 minutes. The data is qualified and reported.

D-5S2 (480-117041-5), D-5D (480-117041-6), D-3S (480-117041-7), D-3D (480-117041-8), D-1S (480-117041-9), D-1D (480-117041-10), D-2S (480-117041-11), FIELD BLANK 1 (480-117041-15) and D-4D (480-117041-18)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: U-4S**

**Lab Sample ID: 480-117041-1**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-117041-2**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-117041-3**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-117041-4**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-117041-5**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-117041-6**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-117041-7**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-117041-8**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-117041-9**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-117041-10**

No Detections.

**Client Sample ID: D-2S**

**Lab Sample ID: 480-117041-11**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-117041-12**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-117041-13**

No Detections.

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-117041-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-117041-15**

No Detections.

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-117041-16**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-117041-17**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-117041-18**

No Detections.

**Client Sample ID: D-8**

**Lab Sample ID: 480-117041-19**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-117041-20**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-117041-21**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: U-4S**

**Lab Sample ID: 480-117041-1**

Date Collected: 04/24/17 10:45

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	27.3		14.5	14.8	50.0	13.7	pCi/L	05/02/17 14:30	05/23/17 11:33	1
Radium-228	6.33	U	21.9	21.9	50.0	26.2	pCi/L	05/02/17 14:30	05/23/17 11:33	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: U-4D**

**Lab Sample ID: 480-117041-2**

**Date Collected: 04/24/17 11:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	6.37	U	19.5	19.5	50.0	32.9	pCi/L	05/02/17 14:30	05/23/17 11:34	1
Radium-228	12.8	U	18.2	18.2	50.0	28.5	pCi/L	05/02/17 14:30	05/23/17 11:34	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: U-5S**

**Lab Sample ID: 480-117041-3**

**Date Collected: 04/24/17 11:40**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	6.18	U	18.5	18.5	50.0	31.5	pCi/L	05/02/17 14:30	05/23/17 11:37	1
Radium-228	19.2	U	21.3	21.4	50.0	29.6	pCi/L	05/02/17 14:30	05/23/17 11:37	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: U-5D**

**Lab Sample ID: 480-117041-4**

Date Collected: 04/24/17 11:50

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	42.4		12.4	13.1	50.0	10.6	pCi/L	05/02/17 14:30	05/23/17 13:51	1
Radium-228	9.16	U	15.2	15.2	50.0	30.4	pCi/L	05/02/17 14:30	05/23/17 13:51	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-117041-5**

**Date Collected: 04/24/17 12:45**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	4.21	U G	4.99	5.01	50.0	62.1	pCi/L	05/02/17 14:30	05/23/17 16:10	1
Radium-228	3.26	U	36.1	36.1	50.0	42.4	pCi/L	05/02/17 14:30	05/23/17 16:10	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-5D**

**Lab Sample ID: 480-117041-6**

**Date Collected: 04/24/17 13:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	9.34	U G	5.91	5.98	50.0	60.8	pCi/L	05/02/17 14:30	05/23/17 16:59	1
Radium-228	13.9	U	25.8	25.8	50.0	31.0	pCi/L	05/02/17 14:30	05/23/17 16:59	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-3S**

**Lab Sample ID: 480-117041-7**

**Date Collected: 04/24/17 13:30**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	9.92	U G	34.2	34.2	50.0	59.9	pCi/L	05/02/17 14:30	05/23/17 16:12	1
Radium-228	26.9	U G	52.3	52.4	50.0	60.6	pCi/L	05/02/17 14:30	05/23/17 16:12	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-3D**  
**Date Collected: 04/24/17 13:40**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-8**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.000	U G	5.05	5.05	50.0	63.2	pCi/L	05/02/17 14:30	05/23/17 16:52	1
Radium-228	17.2	U	28.9	29.0	50.0	49.7	pCi/L	05/02/17 14:30	05/23/17 16:52	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-1S**

**Lab Sample ID: 480-117041-9**

Date Collected: 04/24/17 14:40

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	33.4		12.2	12.6	50.0	9.59	pCi/L	05/02/17 14:30	05/23/17 18:11	1
Radium-228	18.8	U	28.3	28.3	50.0	36.8	pCi/L	05/02/17 14:30	05/23/17 18:11	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-1D**  
**Date Collected: 04/24/17 14:50**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-10**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	9.29	U G	11.9	11.9	50.0	55.4	pCi/L	05/02/17 14:30	05/23/17 18:12	1
Radium-228	17.6	U	30.8	30.8	50.0	33.8	pCi/L	05/02/17 14:30	05/23/17 18:12	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-2S**

**Lab Sample ID: 480-117041-11**

**Date Collected: 04/24/17 15:35**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	9.89	U G	8.84	8.90	50.0	62.0	pCi/L	05/02/17 14:30	05/23/17 18:49	1
Radium-228	-8.55	U G	49.5	49.5	50.0	59.1	pCi/L	05/02/17 14:30	05/23/17 18:49	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-2D**  
**Date Collected: 04/24/17 15:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-12**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
<b>Radium-226</b>	<b>79.2</b>		24.8	26.0	50.0	17.0	pCi/L	05/02/17 14:30	05/23/17 19:59	1
Radium-228	20.3	U	15.2	15.3	50.0	21.0	pCi/L	05/02/17 14:30	05/23/17 19:59	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-117041-13**

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	46.5		15.8	16.5	50.0	13.6	pCi/L	05/02/17 14:30	05/23/17 19:16	1
Radium-228	11.8	U	31.7	31.7	50.0	38.4	pCi/L	05/02/17 14:30	05/23/17 19:16	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-117041-14**

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	67.6		17.4	18.7	50.0	16.6	pCi/L	05/02/17 14:30	05/23/17 19:18	1
Radium-228	9.83	U	18.8	18.8	50.0	23.4	pCi/L	05/02/17 14:30	05/23/17 19:18	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-117041-15**

**Date Collected: 04/24/17 12:00**

**Matrix: Water**

**Date Received: 04/27/17 09:45**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.544	U G	4.04	4.04	50.0	80.3	pCi/L	05/02/17 14:30	05/23/17 21:02	1
Radium-228	39.3	U G	19.6	20.0	50.0	59.1	pCi/L	05/02/17 14:30	05/23/17 21:02	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-117041-16**

Date Collected: 04/24/17 14:00

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	31.6		16.7	17.0	50.0	11.9	pCi/L	05/02/17 14:30	05/23/17 20:28	1
Radium-228	3.81	U	10.3	10.3	50.0	46.1	pCi/L	05/02/17 14:30	05/23/17 20:28	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-4S**

**Lab Sample ID: 480-117041-17**

Date Collected: 04/25/17 09:35

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	74.9		18.6	20.1	50.0	14.3	pCi/L	05/02/17 14:30	05/23/17 23:06	1
Radium-228	19.4	U	40.0	40.0	50.0	46.0	pCi/L	05/02/17 14:30	05/23/17 23:06	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-4D**  
**Date Collected: 04/25/17 09:45**  
**Date Received: 04/27/17 09:45**

**Lab Sample ID: 480-117041-18**  
**Matrix: Water**

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	74.4		19.3	20.7	50.0	13.6	pCi/L	05/02/17 14:30	05/23/17 22:01	1
Radium-228	15.0	U G	18.8	18.8	50.0	50.1	pCi/L	05/02/17 14:30	05/23/17 22:01	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-8**

**Lab Sample ID: 480-117041-19**

Date Collected: 04/25/17 10:15

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	69.8		23.1	24.1	50.0	17.8	pCi/L	05/02/17 14:30	05/23/17 22:06	1
Radium-228	20.2	U	29.4	29.4	50.0	37.4	pCi/L	05/02/17 14:30	05/23/17 22:06	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: D-9**

**Lab Sample ID: 480-117041-20**

Date Collected: 04/25/17 11:00

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	97.1		22.1	24.2	50.0	16.6	pCi/L	05/02/17 14:30	05/23/17 23:08	1
Radium-228	19.8	U	29.8	29.8	50.0	36.8	pCi/L	05/02/17 14:30	05/23/17 23:08	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-117041-21**

Date Collected: 04/25/17 11:15

Matrix: Water

Date Received: 04/27/17 09:45

**Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	54.2		17.4	18.2	50.0	14.3	pCi/L	05/02/17 15:20	05/23/17 20:26	1
Radium-228	7.32	U	17.4	17.5	50.0	31.6	pCi/L	05/02/17 15:20	05/23/17 20:26	1

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# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

**Lab Sample ID: MB 160-306778/1-A**  
**Matrix: Water**  
**Analysis Batch: 310086**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 306778**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	32.03		10.1	10.6	50.0	30.5	pCi/L	05/02/17 14:30	05/23/17 08:50	1
Radium-228	12.48	U	22.1	22.1	50.0	27.7	pCi/L	05/02/17 14:30	05/23/17 08:50	1

**Lab Sample ID: LCS 160-306778/2-A**  
**Matrix: Water**  
**Analysis Batch: 310244**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 306778**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec.
				Uncert. (2σ+/-)					Limits
Americium-241	136000	129100		14900		300	pCi/L	95	90 - 111
Cesium-137	46700	46250		4630		86.8	pCi/L	99	90 - 111
Cobalt-60	38400	37920		3750		57.7	pCi/L	99	89 - 110

**Lab Sample ID: 480-117041-1 DU**  
**Matrix: Water**  
**Analysis Batch: 310085**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 306778**

Analyte	Sample Sample		DU DU		Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	27.3		6.230	U	19.0	50.0	31.9	pCi/L	0.62	1
Radium-228	6.33	U	11.49	U	21.2	50.0	23.1	pCi/L	0.12	1

**Lab Sample ID: MB 160-306782/1-A**  
**Matrix: Water**  
**Analysis Batch: 310088**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 306782**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	10.88	U	6.56	6.65	50.0	37.6	pCi/L	05/02/17 15:20	05/23/17 13:41	1
Radium-228	12.59	U	22.0	22.0	50.0	37.0	pCi/L	05/02/17 15:20	05/23/17 13:41	1

**Lab Sample ID: LCS 160-306782/2-A**  
**Matrix: Water**  
**Analysis Batch: 310086**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 306782**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec.
				Uncert. (2σ+/-)					Limits
Americium-241	136000	131100		15100		277	pCi/L	96	90 - 111
Cesium-137	46700	46290		4630		79.1	pCi/L	99	90 - 111
Cobalt-60	38400	37230		3680		50.2	pCi/L	97	89 - 110

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Rad

### Prep Batch: 306778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-1	U-4S	Total/NA	Water	Fill_Geo-21	
480-117041-2	U-4D	Total/NA	Water	Fill_Geo-21	
480-117041-3	U-5S	Total/NA	Water	Fill_Geo-21	
480-117041-4	U-5D	Total/NA	Water	Fill_Geo-21	
480-117041-5	D-5S2	Total/NA	Water	Fill_Geo-21	
480-117041-6	D-5D	Total/NA	Water	Fill_Geo-21	
480-117041-7	D-3S	Total/NA	Water	Fill_Geo-21	
480-117041-8	D-3D	Total/NA	Water	Fill_Geo-21	
480-117041-9	D-1S	Total/NA	Water	Fill_Geo-21	
480-117041-10	D-1D	Total/NA	Water	Fill_Geo-21	
480-117041-11	D-2S	Total/NA	Water	Fill_Geo-21	
480-117041-12	D-2D	Total/NA	Water	Fill_Geo-21	
480-117041-13	DUP-1	Total/NA	Water	Fill_Geo-21	
480-117041-14	DUP-2	Total/NA	Water	Fill_Geo-21	
480-117041-15	FIELD BLANK 1	Total/NA	Water	Fill_Geo-21	
480-117041-16	FIELD BLANK 2	Total/NA	Water	Fill_Geo-21	
480-117041-17	D-4S	Total/NA	Water	Fill_Geo-21	
480-117041-18	D-4D	Total/NA	Water	Fill_Geo-21	
480-117041-19	D-8	Total/NA	Water	Fill_Geo-21	
480-117041-20	D-9	Total/NA	Water	Fill_Geo-21	
MB 160-306778/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-306778/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
480-117041-1 DU	U-4S	Total/NA	Water	Fill_Geo-21	

### Prep Batch: 306782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-117041-21	EQUIPMENT BLANK	Total/NA	Water	Fill_Geo-21	
MB 160-306782/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-306782/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Client Sample ID: U-4S

Lab Sample ID: 480-117041-1

Date Collected: 04/24/17 10:45

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 11:33	RTM	TAL SL

## Client Sample ID: U-4D

Lab Sample ID: 480-117041-2

Date Collected: 04/24/17 11:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 11:34	RTM	TAL SL

## Client Sample ID: U-5S

Lab Sample ID: 480-117041-3

Date Collected: 04/24/17 11:40

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 11:37	KLS	TAL SL

## Client Sample ID: U-5D

Lab Sample ID: 480-117041-4

Date Collected: 04/24/17 11:50

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 13:51	RTM	TAL SL

## Client Sample ID: D-5S2

Lab Sample ID: 480-117041-5

Date Collected: 04/24/17 12:45

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 16:10	RTM	TAL SL

## Client Sample ID: D-5D

Lab Sample ID: 480-117041-6

Date Collected: 04/24/17 13:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 16:59	RTM	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Client Sample ID: D-3S

Lab Sample ID: 480-117041-7

Date Collected: 04/24/17 13:30

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 16:12	KLS	TAL SL

## Client Sample ID: D-3D

Lab Sample ID: 480-117041-8

Date Collected: 04/24/17 13:40

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 16:52	KLS	TAL SL

## Client Sample ID: D-1S

Lab Sample ID: 480-117041-9

Date Collected: 04/24/17 14:40

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 18:11	RTM	TAL SL

## Client Sample ID: D-1D

Lab Sample ID: 480-117041-10

Date Collected: 04/24/17 14:50

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 18:12	RTM	TAL SL

## Client Sample ID: D-2S

Lab Sample ID: 480-117041-11

Date Collected: 04/24/17 15:35

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 18:49	KLS	TAL SL

## Client Sample ID: D-2D

Lab Sample ID: 480-117041-12

Date Collected: 04/24/17 15:45

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 19:59	KLS	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Client Sample ID: DUP-1

Lab Sample ID: 480-117041-13

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 19:16	RTM	TAL SL

## Client Sample ID: DUP-2

Lab Sample ID: 480-117041-14

Date Collected: 04/24/17 00:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 19:18	RTM	TAL SL

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-117041-15

Date Collected: 04/24/17 12:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 21:02	KLS	TAL SL

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-117041-16

Date Collected: 04/24/17 14:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 20:28	RTM	TAL SL

## Client Sample ID: D-4S

Lab Sample ID: 480-117041-17

Date Collected: 04/25/17 09:35

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 23:06	RTM	TAL SL

## Client Sample ID: D-4D

Lab Sample ID: 480-117041-18

Date Collected: 04/25/17 09:45

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 22:01	RTM	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

## Client Sample ID: D-8

Lab Sample ID: 480-117041-19

Date Collected: 04/25/17 10:15

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310088	05/23/17 22:06	KLS	TAL SL

## Client Sample ID: D-9

Lab Sample ID: 480-117041-20

Date Collected: 04/25/17 11:00

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306778	05/02/17 14:30	MFM	TAL SL
Total/NA	Analysis	901.1		1	310085	05/23/17 23:08	RTM	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-117041-21

Date Collected: 04/25/17 11:15

Matrix: Water

Date Received: 04/27/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			306782	05/02/17 15:20	MFM	TAL SL
Total/NA	Analysis	901.1		1	310086	05/23/17 20:26	RTM	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

### Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-17 *
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17 *
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

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Method	Method Description	Protocol	Laboratory
901.1	Radium-226 & Other Gamma Emitters (GS)	EPA	TAL SL

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**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566





# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-117041-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-117041-1	U-4S	Water	04/24/17 10:45	04/27/17 09:45
480-117041-2	U-4D	Water	04/24/17 11:00	04/27/17 09:45
480-117041-3	U-5S	Water	04/24/17 11:40	04/27/17 09:45
480-117041-4	U-5D	Water	04/24/17 11:50	04/27/17 09:45
480-117041-5	D-5S2	Water	04/24/17 12:45	04/27/17 09:45
480-117041-6	D-5D	Water	04/24/17 13:00	04/27/17 09:45
480-117041-7	D-3S	Water	04/24/17 13:30	04/27/17 09:45
480-117041-8	D-3D	Water	04/24/17 13:40	04/27/17 09:45
480-117041-9	D-1S	Water	04/24/17 14:40	04/27/17 09:45
480-117041-10	D-1D	Water	04/24/17 14:50	04/27/17 09:45
480-117041-11	D-2S	Water	04/24/17 15:35	04/27/17 09:45
480-117041-12	D-2D	Water	04/24/17 15:45	04/27/17 09:45
480-117041-13	DUP-1	Water	04/24/17 00:00	04/27/17 09:45
480-117041-14	DUP-2	Water	04/24/17 00:00	04/27/17 09:45
480-117041-15	FIELD BLANK 1	Water	04/24/17 12:00	04/27/17 09:45
480-117041-16	FIELD BLANK 2	Water	04/24/17 14:00	04/27/17 09:45
480-117041-17	D-4S	Water	04/25/17 09:35	04/27/17 09:45
480-117041-18	D-4D	Water	04/25/17 09:45	04/27/17 09:45
480-117041-19	D-8	Water	04/25/17 10:15	04/27/17 09:45
480-117041-20	D-9	Water	04/25/17 11:00	04/27/17 09:45
480-117041-21	EQUIPMENT BLANK	Water	04/25/17 11:15	04/27/17 09:45

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMINT 2017 CCR GW Event 3  
Site:  
P O # 3063-17-00547

**Project Manager: Ryan Van Dette**  
Tel/Fax:

**Site Contact: Nathaniel Beineman** Date: 4/24/17  
Carrier:

COC No: 1 of 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:							Sample Specific Notes:		
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride		Fluoride	TDS
U-45	4/24/17	10:45	Grab	Water	5	X	X	X	X	X	X	X	X	X	
U-47	4/24/17	11:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
U-55	4/24/17	11:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	
U-5D	4/24/17	11:50	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-35Z	4/24/17	12:45	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-5D	4/24/17	13:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-35	4/24/17	13:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-3D	4/24/17	13:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-15	4/24/17	14:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-1D	4/24/17	14:50	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-25	4/24/17	15:35	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-2D	4/24/17	15:45	Grab	Water	5	X	X	X	X	X	X	X	X	X	



480-117041 COC

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months  
 \*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.:	Company: <u>TA</u>	Date/Time: <u>4/26/17 1400</u>
Relinquished by: <u>MA</u>	Company: <u>TA</u>	Date/Time: <u>4/26/17 0845</u>
Relinquished by: <u>MA</u>	Company: <u>TA</u>	Date/Time: <u>4/26/17 0845</u>
Relinquished by:	Company:	Date/Time:

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Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 3  
Site:  
P O # 3063-17-00547

Project Manager: Ryan Van Dette  
Tel/Fax:  
Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: Nathaniel Beineman Date: 4/24/17  
Lab Contact: Carrier: HZHT

COC No: 2 of 2 COCs

Sampler:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Lab Contact:									
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	
DVP-1	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X	X	X	
DVP-2	4/24/17	-	Grab	Water	5	X	X	X	X	X	X	X	X	X	
Field Blank 1	4/24/17	12:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
Field Blank 2	4/24/17	14:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-4S	4/25/17	9:35	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-4D	4/25/17	9:45	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-8	4/25/17	10:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-9	4/25/17	11:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
Equipment Blank	4/25/17	11:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Cooler Temp. °C: Obs'd: \_\_\_\_\_ Corr'd: \_\_\_\_\_ Therm ID No.: \_\_\_\_\_

3.6, 3.0, 2.5

Received by: *Adh* Date/Time: 4/26/17  
Received by: *TA* Date/Time: 4/26/17  
Received in Laboratory by: *Adh* Date/Time: 4/26/17





# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: VanDette, Ryan T	Chain of Custody: Minnesota
Client Contact Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	480-117041 Chain of Custody
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota	
Address: 13715 Rider Trail North, Earth City, MO, 63045		Job #: 480-117041-1	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:	
Project Name: SKB Rosemount		Project #: 48013709	
Site: Rosemount		SSOW#:	
Due Date Requested: 5/9/2017		Analysis Requested	
TAT Requested (days):		Total Number of Containers	
PO #:		Field Filtered Sample (Yes or No)	
WO #:		Perform MS/MSD (Yes or No)	
Sample Date		901.1, Ra/Fill, Geo, 21 Radium-226/228	
Sample Time		Preservation Code:	
Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Ali)	
Sample ID (Lab ID)		Special Instructions/Note:	
U-4S (480-117041-1)	4/24/17 10:45 Central	X	Water
U-4D (480-117041-2)	4/24/17 11:00 Central	X	Water
U-5S (480-117041-3)	4/24/17 11:40 Central	X	Water
U-5D (480-117041-4)	4/24/17 11:50 Central	X	Water
D-5S2 (480-117041-5)	4/24/17 12:45 Central	X	Water
D-5D (480-117041-6)	4/24/17 13:00 Central	X	Water
D-3S (480-117041-7)	4/24/17 13:30 Central	X	Water
D-3D (480-117041-8)	4/24/17 13:40 Central	X	Water
D-1S (480-117041-9)	4/24/17 14:40 Central	X	Water

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: *Chapelle* Date/Time: 4/27/17 1600 Company: TAS

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_





**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T	Carmer Tracking No(s):	COC No: 480-34620.2						
Client Contact: Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	State of Origin: Minnesota	Page: Page 2 of 2						
Company: TestAmerica Laboratories, Inc.		Address: 13715 Rider Trail North, Earth City MO, 63045	Job #: 480-117041-1	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - NaHSO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - EDA Z - other (specify)						
Due Date Requested: 5/9/2017		PO #:	Analysis Requested							
TAT Requested (days):		WO #:	Total Number of containers							
Project #: 48013709		Project Name: SKB Rosemount	Special Instructions/Note:							
SSOW#:		Site: Rosemount	901 Ra/Fill Geo. 21 Radium-226/228							
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (G=Grab, B=Tissue, A=Air)	Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	901 Ra/Fill Geo. 21 Radium-226/228	Analysis Requested	Total Number of containers
D-1D (480-117041-10)	4/24/17	14:50	Central	Water	Water	X	X			1
D-2S (480-117041-11)	4/24/17	15:35	Central	Water	Water	X	X			1
D-2D (480-117041-12)	4/24/17	15:45	Central	Water	Water	X	X			1
DUP-1 (480-117041-13)	4/24/17	Central	Central	Water	Water	X	X			1
DUP-2 (480-117041-14)	4/24/17	Central	Central	Water	Water	X	X			1
FIELD BLANK 1 (480-117041-15)	4/24/17	12:00	Central	Water	Water	X	X			1
FIELD BLANK 2 (480-117041-16)	4/24/17	14:00	Central	Water	Water	X	X			1
D-4S (480-117041-17)	4/25/17	09:35	Central	Water	Water	X	X			1

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: *[Signature]* Date/Time: 4/27/17 1600 Company: T.A.S.  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 Δ Yes Δ No

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

Method of Shipment: \_\_\_\_\_  
 Received by: *[Signature]* Date/Time: 4/28/17 09:15 Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks:



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-117041-2

SDG Number:

**Login Number: 117041**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-117041-2

SDG Number:

**Login Number: 117041**

**List Number: 2**

**Creator: Clarke, Jill C**

**List Source: TestAmerica St. Louis**

**List Creation: 04/29/17 07:09 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-118337-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

6/6/2017 1:05:25 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

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### LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Job ID: 480-118337-1

### Laboratory: TestAmerica Buffalo

#### Narrative

#### Job Narrative 480-118337-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 5/20/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.0° C, 2.2° C, 2.4° C and 2.5° C.

#### HPLC/IC

Method(s) 300.0: The following samples was diluted due to the nature of the sample matrix: U-4S (480-118337-1), U-4D (480-118337-2), U-5S (480-118337-3) and U-5D (480-118337-4). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples was diluted due to the nature of the sample matrix; dilution performed based upon historical results: D-5S2 (480-118337-5), D-5D (480-118337-6), D-3S (480-118337-7), D-3D (480-118337-8), D-1S (480-118337-9), D-1D (480-118337-10), D-2S (480-118337-11), D-2D (480-118337-12), D-4S (480-118337-13), D-4D (480-118337-14), D-8 (480-118337-15), D-9 (480-118337-16), DUP-1 (480-118337-17) and DUP-2 (480-118337-18). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Low Level Continuing Calibration Verification (CCVL 480-359320/52) contained Total Boron outside the control limits. All reported samples FIELD BLANK 1 (480-118337-19) and EQUIPMENT BLANK (480-118337-20) associated with this CCVL were either below the laboratory's standard reporting limit for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples was not performed.

Method(s) 6020A: The continuing calibration verification (CCV 480-358886/10) associated with batch 480-358886 recovered above the upper control limit for Total Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: D-5S2 (480-118337-5) and (MB 480-358665/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: U-4S (480-118337-1), U-4D (480-118337-2), U-5S (480-118337-3), U-5D (480-118337-4), D-5S2 (480-118337-5), D-5D (480-118337-6), D-3S (480-118337-7), D-3D (480-118337-8), D-1S (480-118337-9), D-1D (480-118337-10), D-2S (480-118337-11), D-2D (480-118337-12), D-4S (480-118337-13), D-4D (480-118337-14), D-8 (480-118337-15), D-9 (480-118337-16), DUP-1 (480-118337-17), DUP-2 (480-118337-18), FIELD BLANK 1 (480-118337-19) and EQUIPMENT BLANK (480-118337-20).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: U-4S

## Lab Sample ID: 480-118337-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chromium	0.032		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.37		0.30		ug/L	1		6020A	Total/NA
Selenium	1.1		1.0		ug/L	1		6020A	Total/NA
Chloride	47.9		2.5		mg/L	5		300.0	Total/NA
Sulfate	30.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	430		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.2	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-118337-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	90.5		0.50		mg/L	1		6010C	Total/NA
Selenium	1.0		1.0		ug/L	1		6020A	Total/NA
Chloride	40.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	403		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-118337-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.063		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	93.4		0.50		mg/L	1		6010C	Total/NA
Selenium	1.0		1.0		ug/L	1		6020A	Total/NA
Chloride	45.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	26.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	416		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-118337-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.056		0.0020		mg/L	1		6010C	Total/NA
Calcium	87.9		0.50		mg/L	1		6010C	Total/NA
Chloride	30.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	30.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	391		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: U-5D (Continued)

## Lab Sample ID: 480-118337-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-118337-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.072		0.0020		mg/L	1		6010C	Total/NA
Boron	0.056		0.020		mg/L	1		6010C	Total/NA
Calcium	118		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.32		0.30		ug/L	1		6020A	Total/NA
Selenium	1.7		1.0		ug/L	1		6020A	Total/NA
Chloride	47.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	53.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	498		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-118337-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	99.2		0.50		mg/L	1		6010C	Total/NA
Chloride	23.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	423		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-118337-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Boron	0.065		0.020		mg/L	1		6010C	Total/NA
Calcium	103		0.50		mg/L	1		6010C	Total/NA
Selenium	1.9		1.0		ug/L	1		6020A	Total/NA
Chloride	59.2		2.5		mg/L	5		300.0	Total/NA
Sulfate	41.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	425		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-118337-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.024		0.020		mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-3D (Continued)

## Lab Sample ID: 480-118337-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Selenium	1.1		1.0		ug/L	1		6020A	Total/NA
Chloride	32.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	34.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	403		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-118337-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.055		0.0020		mg/L	1		6010C	Total/NA
Boron	0.038		0.020		mg/L	1		6010C	Total/NA
Calcium	105		0.50		mg/L	1		6010C	Total/NA
Chloride	32.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	456		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-118337-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	90.2		0.50		mg/L	1		6010C	Total/NA
Selenium	1.0		1.0		ug/L	1		6020A	Total/NA
Chloride	41.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	403		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-118337-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	104		0.50		mg/L	1		6010C	Total/NA
Selenium	1.2		1.0		ug/L	1		6020A	Total/NA
Chloride	47.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	449		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-2D

## Lab Sample ID: 480-118337-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Calcium	90.0		0.50		mg/L	1		6010C	Total/NA
Chloride	33.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	395		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-118337-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.069		0.0020		mg/L	1		6010C	Total/NA
Calcium	97.4		0.50		mg/L	1		6010C	Total/NA
Chloride	45.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	429		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-118337-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Calcium	93.9		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.30		0.30		ug/L	1		6020A	Total/NA
Chloride	44.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	32.6		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	385		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-118337-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Calcium	82.0		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.32		0.30		ug/L	1		6020A	Total/NA
Chloride	18.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	52.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	354		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-118337-16

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-9 (Continued)

## Lab Sample ID: 480-118337-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.061		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	94.5		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0045		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.80		0.30		ug/L	1		6020A	Total/NA
Chloride	44.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.6		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	435		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 480-118337-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Boron	0.027		0.020		mg/L	1		6010C	Total/NA
Calcium	91.4		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.32		0.30		ug/L	1		6020A	Total/NA
Selenium	1.0		1.0		ug/L	1		6020A	Total/NA
Chloride	43.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	27.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	401		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-2

## Lab Sample ID: 480-118337-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.024		0.020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Selenium	1.2		1.0		ug/L	1		6020A	Total/NA
Chloride	32.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	35.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	360		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

## Lab Sample ID: 480-118337-19

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-118337-20

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: EQUIPMENT BLANK (Continued)**

**Lab Sample ID: 480-118337-20**

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: U-4S**  
**Date Collected: 05/15/17 10:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.042		0.0020		mg/L		05/20/17 08:50	05/25/17 14:06	1
Boron	0.020		0.020		mg/L		05/20/17 08:50	05/25/17 14:06	1
Calcium	102		0.50		mg/L		05/20/17 08:50	05/25/17 14:06	1
Chromium	0.032		0.0040		mg/L		05/20/17 08:50	05/25/17 14:06	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:06	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:06	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:48	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:48	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/22/17 23:48	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/22/17 23:48	1
Cobalt	0.37		0.30		ug/L		05/22/17 09:44	05/22/17 23:48	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:48	1
Selenium	1.1		1.0		ug/L		05/22/17 09:44	05/22/17 23:48	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/22/17 23:48	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:46	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.9		2.5		mg/L			06/03/17 02:41	5
Fluoride	ND		0.25		mg/L			06/03/17 02:41	5
Sulfate	30.8		10.0		mg/L			06/03/17 02:41	5
Total Dissolved Solids	430		10.0		mg/L			05/21/17 14:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.2	HF	0.1		SU			05/22/17 18:45	1
Temperature	19.3	HF	0.001		Degrees C			05/22/17 18:45	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: U-4D**  
**Date Collected: 05/15/17 10:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 14:23	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 14:23	1
<b>Calcium</b>	<b>90.5</b>		0.50		mg/L		05/20/17 08:50	05/25/17 14:23	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:23	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:23	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:23	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:53	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:53	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/22/17 23:53	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/22/17 23:53	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/22/17 23:53	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:53	1
<b>Selenium</b>	<b>1.0</b>		1.0		ug/L		05/22/17 09:44	05/22/17 23:53	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/22/17 23:53	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:53	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>40.8</b>		2.5		mg/L			06/03/17 02:55	5
Fluoride	ND		0.25		mg/L			06/03/17 02:55	5
<b>Sulfate</b>	<b>29.2</b>		10.0		mg/L			06/03/17 02:55	5
<b>Total Dissolved Solids</b>	<b>403</b>		10.0		mg/L			05/21/17 14:41	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.3</b>	<b>HF</b>	0.1		SU			05/22/17 18:48	1
<b>Temperature</b>	<b>19.4</b>	<b>HF</b>	0.001		Degrees C			05/22/17 18:48	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: U-5S**  
**Date Collected: 05/15/17 11:05**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.063		0.0020		mg/L		05/20/17 08:50	05/25/17 14:27	1
Boron	0.021		0.020		mg/L		05/20/17 08:50	05/25/17 14:27	1
Calcium	93.4		0.50		mg/L		05/20/17 08:50	05/25/17 14:27	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:27	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:27	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:27	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:59	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:59	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/22/17 23:59	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/22/17 23:59	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/22/17 23:59	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:59	1
Selenium	1.0		1.0		ug/L		05/22/17 09:44	05/22/17 23:59	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/22/17 23:59	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:54	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.3		2.5		mg/L			06/03/17 03:10	5
Fluoride	ND		0.25		mg/L			06/03/17 03:10	5
Sulfate	26.1		10.0		mg/L			06/03/17 03:10	5
Total Dissolved Solids	416		10.0		mg/L			05/21/17 14:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1		SU			05/22/17 18:51	1
Temperature	19.3	HF	0.001		Degrees C			05/22/17 18:51	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: U-5D**  
**Date Collected: 05/15/17 11:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.056</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 14:41	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 14:41	1
<b>Calcium</b>	<b>87.9</b>		0.50		mg/L		05/20/17 08:50	05/25/17 14:41	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:41	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:41	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:41	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:04	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:04	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:04	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:04	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:04	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:04	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:04	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:04	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:56	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>30.4</b>		2.5		mg/L			06/03/17 03:24	5
Fluoride	ND		0.25		mg/L			06/03/17 03:24	5
<b>Sulfate</b>	<b>30.5</b>		10.0		mg/L			06/03/17 03:24	5
<b>Total Dissolved Solids</b>	<b>391</b>		10.0		mg/L			05/21/17 14:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.4</b>	<b>HF</b>	0.1		SU			05/22/17 18:54	1
<b>Temperature</b>	<b>19.2</b>	<b>HF</b>	0.001		Degrees C			05/22/17 18:54	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-5S2**  
**Date Collected: 05/15/17 12:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.072		0.0020		mg/L		05/22/17 09:45	05/26/17 18:45	1
Boron	0.056		0.020		mg/L		05/22/17 09:45	05/26/17 18:45	1
Calcium	118		0.50		mg/L		05/22/17 09:45	05/26/17 18:45	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 18:45	1
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 18:45	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 18:45	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:40	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:40	1
Beryllium	ND	^	0.70		ug/L		05/23/17 10:45	05/23/17 16:40	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 16:40	1
Cobalt	0.32		0.30		ug/L		05/23/17 10:45	05/23/17 16:40	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:40	1
Selenium	1.7		1.0		ug/L		05/23/17 10:45	05/23/17 16:40	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 16:40	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 13:16	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.7		2.5		mg/L			06/02/17 22:32	5
Fluoride	ND		0.25		mg/L			06/02/17 22:32	5
Sulfate	53.0		10.0		mg/L			06/02/17 22:32	5
Total Dissolved Solids	498		10.0		mg/L			05/22/17 10:49	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1		SU			05/22/17 18:57	1
Temperature	19.2	HF	0.001		Degrees C			05/22/17 18:57	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-5D**  
**Date Collected: 05/15/17 12:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		05/22/17 09:45	05/26/17 19:12	1
Boron	0.020		0.020		mg/L		05/22/17 09:45	05/26/17 19:12	1
Calcium	99.2		0.50		mg/L		05/22/17 09:45	05/26/17 19:12	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 19:12	1
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 19:12	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 19:12	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:03	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:03	1
Beryllium	ND		0.70		ug/L		05/23/17 10:45	05/23/17 17:03	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 17:03	1
Cobalt	ND		0.30		ug/L		05/23/17 10:45	05/23/17 17:03	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:03	1
Selenium	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:03	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 17:03	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 13:18	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.1		2.5		mg/L			06/02/17 22:40	5
Fluoride	ND		0.25		mg/L			06/02/17 22:40	5
Sulfate	33.1		10.0		mg/L			06/02/17 22:40	5
Total Dissolved Solids	423		10.0		mg/L			05/22/17 10:49	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			05/22/17 19:03	1
Temperature	19.2	HF	0.001		Degrees C			05/22/17 19:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-3S**  
**Date Collected: 05/15/17 13:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-7**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.049		0.0020		mg/L		05/22/17 09:45	05/26/17 19:16	1
Boron	0.065		0.020		mg/L		05/22/17 09:45	05/26/17 19:16	1
Calcium	103		0.50		mg/L		05/22/17 09:45	05/26/17 19:16	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 19:16	1
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 19:16	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 19:16	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:31	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:31	1
Beryllium	ND		0.70		ug/L		05/23/17 10:45	05/23/17 17:31	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 17:31	1
Cobalt	ND		0.30		ug/L		05/23/17 10:45	05/23/17 17:31	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:31	1
Selenium	1.9		1.0		ug/L		05/23/17 10:45	05/23/17 17:31	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 17:31	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 13:20	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.2		2.5		mg/L			06/02/17 22:49	5
Fluoride	ND		0.25		mg/L			06/02/17 22:49	5
Sulfate	41.4		10.0		mg/L			06/02/17 22:49	5
Total Dissolved Solids	425		10.0		mg/L			05/22/17 10:49	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			05/22/17 19:06	1
Temperature	19.1	HF	0.001		Degrees C			05/22/17 19:06	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-3D**  
**Date Collected: 05/15/17 13:10**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-8**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		05/22/17 09:45	05/26/17 19:19	1
Boron	0.024		0.020		mg/L		05/22/17 09:45	05/26/17 19:19	1
Calcium	101		0.50		mg/L		05/22/17 09:45	05/26/17 19:19	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 19:19	1
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 19:19	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 19:19	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:36	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:36	1
Beryllium	ND		0.70		ug/L		05/23/17 10:45	05/23/17 17:36	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 17:36	1
Cobalt	ND		0.30		ug/L		05/23/17 10:45	05/23/17 17:36	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:36	1
Selenium	1.1		1.0		ug/L		05/23/17 10:45	05/23/17 17:36	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 17:36	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 13:22	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.1		2.5		mg/L			06/02/17 22:57	5
Fluoride	ND		0.25		mg/L			06/02/17 22:57	5
Sulfate	34.5		10.0		mg/L			06/02/17 22:57	5
Total Dissolved Solids	403		10.0		mg/L			05/22/17 10:49	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			05/22/17 19:09	1
Temperature	19.3	HF	0.001		Degrees C			05/22/17 19:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-1S**  
**Date Collected: 05/16/17 08:30**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.055		0.0020		mg/L		05/20/17 08:50	05/25/17 14:44	1
Boron	0.038		0.020		mg/L		05/20/17 08:50	05/25/17 14:44	1
Calcium	105		0.50		mg/L		05/20/17 08:50	05/25/17 14:44	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:44	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:44	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:44	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:10	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:10	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:10	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:10	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:10	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:10	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:10	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:10	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:58	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.4		2.5		mg/L			06/02/17 23:05	5
Fluoride	ND		0.25		mg/L			06/02/17 23:05	5
Sulfate	28.8		10.0		mg/L			06/02/17 23:05	5
Total Dissolved Solids	456		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1		SU			05/22/17 19:12	1
Temperature	19.4	HF	0.001		Degrees C			05/22/17 19:12	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-1D**  
**Date Collected: 05/16/17 08:40**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 14:48	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 14:48	1
<b>Calcium</b>	<b>90.2</b>		0.50		mg/L		05/20/17 08:50	05/25/17 14:48	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:48	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:48	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:48	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:15	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:15	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:15	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:15	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:15	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:15	1
<b>Selenium</b>	<b>1.0</b>		1.0		ug/L		05/22/17 09:44	05/23/17 00:15	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:15	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:03	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>41.4</b>		2.5		mg/L			06/02/17 23:13	5
Fluoride	ND		0.25		mg/L			06/02/17 23:13	5
<b>Sulfate</b>	<b>31.7</b>		10.0		mg/L			06/02/17 23:13	5
<b>Total Dissolved Solids</b>	<b>403</b>		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			05/22/17 19:18	1
<b>Temperature</b>	<b>19.1</b>	<b>HF</b>	0.001		Degrees C			05/22/17 19:18	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-2S**  
**Date Collected: 05/16/17 09:30**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.057		0.0020		mg/L		05/20/17 08:50	05/25/17 14:51	1
Boron	0.022		0.020		mg/L		05/20/17 08:50	05/25/17 14:51	1
Calcium	104		0.50		mg/L		05/20/17 08:50	05/25/17 14:51	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:51	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:51	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:51	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:21	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:21	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:21	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:21	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:21	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:21	1
Selenium	1.2		1.0		ug/L		05/22/17 09:44	05/23/17 00:21	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:21	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:04	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.6		2.5		mg/L			06/02/17 23:21	5
Fluoride	ND		0.25		mg/L			06/02/17 23:21	5
Sulfate	31.3		10.0		mg/L			06/02/17 23:21	5
Total Dissolved Solids	449		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1		SU			05/22/17 19:21	1
Temperature	19.0	HF	0.001		Degrees C			05/22/17 19:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-2D**  
**Date Collected: 05/16/17 09:40**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-12**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.051</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 14:54	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 14:54	1
<b>Calcium</b>	<b>90.0</b>		0.50		mg/L		05/20/17 08:50	05/25/17 14:54	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:54	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:54	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:54	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:26	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:26	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:26	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:26	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:26	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:26	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:26	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:26	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:06	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>33.4</b>		2.5		mg/L			06/03/17 00:10	5
Fluoride	ND		0.25		mg/L			06/03/17 00:10	5
<b>Sulfate</b>	<b>29.3</b>		10.0		mg/L			06/03/17 00:10	5
<b>Total Dissolved Solids</b>	<b>395</b>		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			05/22/17 19:24	1
<b>Temperature</b>	<b>19.0</b>	<b>HF</b>	0.001		Degrees C			05/22/17 19:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-4S**  
**Date Collected: 05/16/17 10:25**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-13**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.069</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 14:58	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 14:58	1
<b>Calcium</b>	<b>97.4</b>		0.50		mg/L		05/20/17 08:50	05/25/17 14:58	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 14:58	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 14:58	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 14:58	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:49	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:49	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 00:49	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 00:49	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 00:49	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:49	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 00:49	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 00:49	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>45.3</b>		2.5		mg/L			06/03/17 00:18	5
Fluoride	ND		0.25		mg/L			06/03/17 00:18	5
<b>Sulfate</b>	<b>33.5</b>		10.0		mg/L			06/03/17 00:18	5
<b>Total Dissolved Solids</b>	<b>429</b>		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.4</b>	<b>HF</b>	0.1		SU			05/22/17 19:27	1
<b>Temperature</b>	<b>19.1</b>	<b>HF</b>	0.001		Degrees C			05/22/17 19:27	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-4D**  
**Date Collected: 05/16/17 10:35**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.062</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 15:01	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 15:01	1
<b>Calcium</b>	<b>93.9</b>		0.50		mg/L		05/20/17 08:50	05/25/17 15:01	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 15:01	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:01	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:01	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:17	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:17	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 01:17	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 01:17	1
<b>Cobalt</b>	<b>0.30</b>		0.30		ug/L		05/22/17 09:44	05/23/17 01:17	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:17	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:17	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 01:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>44.3</b>		2.5		mg/L			06/03/17 00:26	5
Fluoride	ND		0.25		mg/L			06/03/17 00:26	5
<b>Sulfate</b>	<b>32.6</b>		10.0		mg/L			06/03/17 00:26	5
<b>Total Dissolved Solids</b>	<b>385</b>		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			05/22/17 19:30	1
<b>Temperature</b>	<b>19.3</b>	<b>HF</b>	0.001		Degrees C			05/22/17 19:30	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-8**

**Date Collected: 05/16/17 11:20**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-15**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.054</b>		0.0020		mg/L		05/20/17 08:50	05/25/17 15:05	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 15:05	1
<b>Calcium</b>	<b>82.0</b>		0.50		mg/L		05/20/17 08:50	05/25/17 15:05	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 15:05	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:05	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:05	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:22	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:22	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 01:22	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 01:22	1
<b>Cobalt</b>	<b>0.32</b>		0.30		ug/L		05/22/17 09:44	05/23/17 01:22	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:22	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:22	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 01:22	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:12	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>18.8</b>		2.5		mg/L			06/03/17 00:34	5
Fluoride	ND		0.25		mg/L			06/03/17 00:34	5
<b>Sulfate</b>	<b>52.8</b>		10.0		mg/L			06/03/17 00:34	5
<b>Total Dissolved Solids</b>	<b>354</b>		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			05/22/17 19:33	1
<b>Temperature</b>	<b>19.4</b>	<b>HF</b>	0.001		Degrees C			05/22/17 19:33	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: D-9**

**Date Collected: 05/16/17 11:50**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-16**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.061		0.0020		mg/L		05/20/17 08:50	05/25/17 15:08	1
Boron	0.020		0.020		mg/L		05/20/17 08:50	05/25/17 15:08	1
Calcium	94.5		0.50		mg/L		05/20/17 08:50	05/25/17 15:08	1
Chromium	0.0045		0.0040		mg/L		05/20/17 08:50	05/25/17 15:08	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:08	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:08	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:28	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:28	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 01:28	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 01:28	1
Cobalt	0.80		0.30		ug/L		05/22/17 09:44	05/23/17 01:28	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:28	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:28	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 01:28	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.7		2.5		mg/L			06/03/17 00:42	5
Fluoride	ND		0.25		mg/L			06/03/17 00:42	5
Sulfate	33.6		10.0		mg/L			06/03/17 00:42	5
Total Dissolved Solids	435		10.0		mg/L			05/22/17 08:46	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			05/22/17 19:36	1
Temperature	19.2	HF	0.001		Degrees C			05/22/17 19:36	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: DUP-1**

**Date Collected: 05/15/17 00:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-17**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.062		0.0020		mg/L		05/20/17 08:50	05/25/17 15:22	1
Boron	0.027		0.020		mg/L		05/20/17 08:50	05/26/17 14:51	1
Calcium	91.4		0.50		mg/L		05/20/17 08:50	05/25/17 15:22	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 15:22	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:22	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:22	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:33	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:33	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 01:33	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 01:33	1
Cobalt	0.32		0.30		ug/L		05/22/17 09:44	05/23/17 01:33	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:33	1
Selenium	1.0		1.0		ug/L		05/22/17 09:44	05/23/17 01:33	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 01:33	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.5		2.5		mg/L			06/03/17 00:51	5
Fluoride	ND		0.25		mg/L			06/03/17 00:51	5
Sulfate	27.1		10.0		mg/L			06/03/17 00:51	5
Total Dissolved Solids	401		10.0		mg/L			05/21/17 14:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1		SU			05/22/17 19:38	1
Temperature	19.1	HF	0.001		Degrees C			05/22/17 19:38	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: DUP-2**

**Date Collected: 05/15/17 00:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-18**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		05/22/17 09:45	05/26/17 19:23	1
Boron	0.024		0.020		mg/L		05/22/17 09:45	05/26/17 19:23	1
Calcium	101		0.50		mg/L		05/22/17 09:45	05/26/17 19:23	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 19:23	1
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 19:23	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 19:23	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:42	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:42	1
Beryllium	ND		0.70		ug/L		05/23/17 10:45	05/23/17 17:42	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 17:42	1
Cobalt	ND		0.30		ug/L		05/23/17 10:45	05/23/17 17:42	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 17:42	1
Selenium	1.2		1.0		ug/L		05/23/17 10:45	05/23/17 17:42	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 17:42	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 13:24	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.7		2.5		mg/L			06/03/17 01:31	5
Fluoride	ND		0.25		mg/L			06/03/17 01:31	5
Sulfate	35.2		10.0		mg/L			06/03/17 01:31	5
Total Dissolved Solids	360		10.0		mg/L			05/22/17 10:49	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1		SU			05/22/17 19:41	1
Temperature	19.1	HF	0.001		Degrees C			05/22/17 19:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-118337-19**

**Date Collected: 05/16/17 12:00**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		05/20/17 08:50	05/25/17 15:26	1
Boron	ND	^	0.020		mg/L		05/20/17 08:50	05/25/17 15:26	1
Calcium	ND		0.50		mg/L		05/20/17 08:50	05/25/17 15:26	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 15:26	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:26	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:26	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:39	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:39	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 01:39	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 01:39	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 01:39	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:39	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 01:39	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 01:39	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			06/03/17 01:39	1
Fluoride	ND		0.050		mg/L			06/03/17 01:39	1
Sulfate	ND		2.0		mg/L			06/03/17 01:39	1
Total Dissolved Solids	ND		10.0		mg/L			05/22/17 08:46	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			05/22/17 19:44	1
Temperature	19.3	HF	0.001		Degrees C			05/22/17 19:44	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-118337-20**

**Date Collected: 05/16/17 12:05**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		05/20/17 08:50	05/25/17 15:29	1
Boron	ND	^	0.020		mg/L		05/20/17 08:50	05/25/17 15:29	1
Calcium	ND		0.50		mg/L		05/20/17 08:50	05/25/17 15:29	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 15:29	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 15:29	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 15:29	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/23/17 02:02	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/23/17 02:02	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/23/17 02:02	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/23/17 02:02	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/23/17 02:02	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/23/17 02:02	1
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/23/17 02:02	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/23/17 02:02	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 12:20	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			06/03/17 01:48	1
Fluoride	ND		0.050		mg/L			06/03/17 01:48	1
Sulfate	ND		2.0		mg/L			06/03/17 01:48	1
Total Dissolved Solids	ND		10.0		mg/L			05/22/17 08:46	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			05/22/17 19:50	1
Temperature	19.6	HF	0.001		Degrees C			05/22/17 19:50	1

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-358385/1-A**  
**Matrix: Water**  
**Analysis Batch: 359320**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358385**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		05/20/17 08:50	05/25/17 13:59	1
Boron	ND		0.020		mg/L		05/20/17 08:50	05/25/17 13:59	1
Calcium	ND		0.50		mg/L		05/20/17 08:50	05/25/17 13:59	1
Chromium	ND		0.0040		mg/L		05/20/17 08:50	05/25/17 13:59	1
Lead	ND		0.010		mg/L		05/20/17 08:50	05/25/17 13:59	1
Lithium	ND		0.030		mg/L		05/20/17 08:50	05/25/17 13:59	1

**Lab Sample ID: LCS 480-358385/2-A**  
**Matrix: Water**  
**Analysis Batch: 359320**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358385**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.212		mg/L		106	80 - 120
Boron	0.200	0.204		mg/L		102	80 - 120
Calcium	10.0	10.41		mg/L		104	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Lead	0.200	0.208		mg/L		104	80 - 120

**Lab Sample ID: 480-118337-1 MS**  
**Matrix: Water**  
**Analysis Batch: 359320**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 358385**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.042		0.200	0.258		mg/L		108	75 - 125
Boron	0.020		0.200	0.234		mg/L		107	75 - 125
Calcium	102		10.0	110.0	4	mg/L		83	75 - 125
Chromium	0.032		0.200	0.240		mg/L		104	75 - 125
Lead	ND		0.200	0.218		mg/L		106	75 - 125

**Lab Sample ID: 480-118337-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 359320**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 358385**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.042		0.200	0.257		mg/L		108	75 - 125	0	20
Boron	0.020		0.200	0.232		mg/L		106	75 - 125	1	20
Calcium	102		10.0	113.0	4	mg/L		113	75 - 125	3	20
Chromium	0.032		0.200	0.241		mg/L		104	75 - 125	0	20
Lead	ND		0.200	0.219		mg/L		106	75 - 125	1	20

**Lab Sample ID: MB 480-358574/1-A**  
**Matrix: Water**  
**Analysis Batch: 359572**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358574**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		05/22/17 09:45	05/26/17 18:31	1
Boron	ND		0.020		mg/L		05/22/17 09:45	05/26/17 18:31	1
Calcium	ND		0.50		mg/L		05/22/17 09:45	05/26/17 18:31	1
Chromium	ND		0.0040		mg/L		05/22/17 09:45	05/26/17 18:31	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-358574/1-A**  
**Matrix: Water**  
**Analysis Batch: 359572**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358574**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		05/22/17 09:45	05/26/17 18:31	1
Lithium	ND		0.030		mg/L		05/22/17 09:45	05/26/17 18:31	1

**Lab Sample ID: LCS 480-358574/2-A**  
**Matrix: Water**  
**Analysis Batch: 359572**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358574**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.211		mg/L		105	80 - 120
Boron	0.200	0.213		mg/L		107	80 - 120
Calcium	10.0	10.20		mg/L		102	80 - 120
Chromium	0.200	0.207		mg/L		103	80 - 120
Lead	0.200	0.213		mg/L		106	80 - 120

**Lab Sample ID: 480-118337-5 MS**  
**Matrix: Water**  
**Analysis Batch: 359572**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**  
**Prep Batch: 358574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.072		0.200	0.278		mg/L		103	75 - 125
Boron	0.056		0.200	0.261		mg/L		103	75 - 125
Calcium	118		10.0	127.8	4	mg/L		93	75 - 125
Chromium	ND		0.200	0.204		mg/L		102	75 - 125
Lead	ND		0.200	0.218		mg/L		107	75 - 125

**Lab Sample ID: 480-118337-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 359572**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**  
**Prep Batch: 358574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.072		0.200	0.278		mg/L		103	75 - 125	0	20
Boron	0.056		0.200	0.265		mg/L		105	75 - 125	1	20
Calcium	118		10.0	131.3	4	mg/L		128	75 - 125	3	20
Chromium	ND		0.200	0.204		mg/L		102	75 - 125	0	20
Lead	ND		0.200	0.220		mg/L		108	75 - 125	1	20

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-358468/1-A**  
**Matrix: Water**  
**Analysis Batch: 358686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358468**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:37	1
Arsenic	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:37	1
Beryllium	ND		0.70		ug/L		05/22/17 09:44	05/22/17 23:37	1
Cadmium	ND		0.50		ug/L		05/22/17 09:44	05/22/17 23:37	1
Cobalt	ND		0.30		ug/L		05/22/17 09:44	05/22/17 23:37	1
Molybdenum	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:37	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-358468/1-A**  
**Matrix: Water**  
**Analysis Batch: 358686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358468**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		1.0		ug/L		05/22/17 09:44	05/22/17 23:37	1
Thallium	ND		0.20		ug/L		05/22/17 09:44	05/22/17 23:37	1

**Lab Sample ID: LCS 480-358468/2-A**  
**Matrix: Water**  
**Analysis Batch: 358686**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358468**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.59		ug/L		98	80 - 120
Arsenic	20.0	19.69		ug/L		98	80 - 120
Beryllium	20.0	20.86		ug/L		104	80 - 120
Cadmium	20.0	19.56		ug/L		98	80 - 120
Cobalt	20.0	20.19		ug/L		101	80 - 120
Molybdenum	20.0	20.08		ug/L		100	80 - 120
Selenium	20.0	19.08		ug/L		95	80 - 120
Thallium	20.0	20.70		ug/L		104	80 - 120

**Lab Sample ID: 480-118337-13 MS**  
**Matrix: Water**  
**Analysis Batch: 358686**

**Client Sample ID: D-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 358468**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	19.87		ug/L		99	75 - 125
Arsenic	ND		20.0	20.10		ug/L		99	75 - 125
Beryllium	ND		20.0	20.91		ug/L		105	75 - 125
Cadmium	ND		20.0	19.30		ug/L		96	75 - 125
Cobalt	ND		20.0	19.89		ug/L		98	75 - 125
Molybdenum	ND		20.0	19.98		ug/L		98	75 - 125
Selenium	ND		20.0	19.72		ug/L		95	75 - 125
Thallium	ND		20.0	21.06		ug/L		105	75 - 125

**Lab Sample ID: 480-118337-13 MSD**  
**Matrix: Water**  
**Analysis Batch: 358686**

**Client Sample ID: D-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 358468**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	19.88		ug/L		99	75 - 125	0	20
Arsenic	ND		20.0	20.08		ug/L		99	75 - 125	0	20
Beryllium	ND		20.0	20.96		ug/L		105	75 - 125	0	20
Cadmium	ND		20.0	19.05		ug/L		95	75 - 125	1	20
Cobalt	ND		20.0	19.82		ug/L		98	75 - 125	0	20
Molybdenum	ND		20.0	19.75		ug/L		97	75 - 125	1	20
Selenium	ND		20.0	19.48		ug/L		94	75 - 125	1	20
Thallium	ND		20.0	20.83		ug/L		104	75 - 125	1	20

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-358665/1-A**  
**Matrix: Water**  
**Analysis Batch: 358886**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 358665**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:29	1
Arsenic	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:29	1
Beryllium	ND	^	0.70		ug/L		05/23/17 10:45	05/23/17 16:29	1
Cadmium	ND		0.50		ug/L		05/23/17 10:45	05/23/17 16:29	1
Cobalt	ND		0.30		ug/L		05/23/17 10:45	05/23/17 16:29	1
Molybdenum	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:29	1
Selenium	ND		1.0		ug/L		05/23/17 10:45	05/23/17 16:29	1
Thallium	ND		0.20		ug/L		05/23/17 10:45	05/23/17 16:29	1

**Lab Sample ID: LCS 480-358665/2-A**  
**Matrix: Water**  
**Analysis Batch: 358886**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358665**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.73		ug/L		99	80 - 120
Arsenic	20.0	19.53		ug/L		98	80 - 120
Cadmium	20.0	19.08		ug/L		95	80 - 120
Cobalt	20.0	20.32		ug/L		102	80 - 120
Molybdenum	20.0	19.52		ug/L		98	80 - 120
Selenium	20.0	18.75		ug/L		94	80 - 120
Thallium	20.0	19.79		ug/L		99	80 - 120

**Lab Sample ID: LCS 480-358665/2-A**  
**Matrix: Water**  
**Analysis Batch: 359101**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358665**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	20.75		ug/L		104	80 - 120

**Lab Sample ID: 480-118337-6 MS**  
**Matrix: Water**  
**Analysis Batch: 358886**

**Client Sample ID: D-5D**  
**Prep Type: Total/NA**  
**Prep Batch: 358665**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	20.50		ug/L		103	75 - 125
Arsenic	ND		20.0	20.70		ug/L		103	75 - 125
Beryllium	ND		20.0	21.31		ug/L		107	75 - 125
Cadmium	ND		20.0	19.23		ug/L		96	75 - 125
Cobalt	ND		20.0	19.86		ug/L		98	75 - 125
Molybdenum	ND		20.0	19.81		ug/L		98	75 - 125
Selenium	ND		20.0	20.49		ug/L		98	75 - 125
Thallium	ND		20.0	19.91		ug/L		100	75 - 125

**Lab Sample ID: 480-118337-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 358886**

**Client Sample ID: D-5D**  
**Prep Type: Total/NA**  
**Prep Batch: 358665**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	20.40		ug/L		102	75 - 125	0	20

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 480-118337-6 MSD  
Matrix: Water  
Analysis Batch: 358886

Client Sample ID: D-5D  
Prep Type: Total/NA  
Prep Batch: 358665

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Arsenic	ND		20.0	20.51		ug/L		103	75 - 125	1	20
Beryllium	ND		20.0	21.10		ug/L		105	75 - 125	1	20
Cadmium	ND		20.0	19.51		ug/L		98	75 - 125	1	20
Cobalt	ND		20.0	19.86		ug/L		98	75 - 125	0	20
Molybdenum	ND		20.0	19.87		ug/L		98	75 - 125	0	20
Selenium	ND		20.0	20.48		ug/L		98	75 - 125	0	20
Thallium	ND		20.0	19.79		ug/L		99	75 - 125	1	20

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-358430/1-A  
Matrix: Water  
Analysis Batch: 358577

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 358430

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20		ug/L		05/22/17 07:30	05/22/17 11:42	1

Lab Sample ID: LCS 480-358430/2-A  
Matrix: Water  
Analysis Batch: 358577

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 358430

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Mercury	6.67	6.93		ug/L		104	80 - 120

Lab Sample ID: 480-118337-1 MS  
Matrix: Water  
Analysis Batch: 358577

Client Sample ID: U-4S  
Prep Type: Total/NA  
Prep Batch: 358430

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				Limits
Mercury	ND		6.67	6.98		ug/L		105	80 - 120

Lab Sample ID: 480-118337-1 MSD  
Matrix: Water  
Analysis Batch: 358577

Client Sample ID: U-4S  
Prep Type: Total/NA  
Prep Batch: 358430

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Mercury	ND		6.67	7.18		ug/L		108	80 - 120	3	20

Lab Sample ID: MB 480-358613/1-A  
Matrix: Water  
Analysis Batch: 358740

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 358613

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.20		ug/L		05/23/17 08:15	05/23/17 12:37	1

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# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: LCS 480-358613/2-A**  
**Matrix: Water**  
**Analysis Batch: 358740**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 358613**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	6.67	6.37		ug/L		95	80 - 120

**Lab Sample ID: LCSD 480-358613/3-A**  
**Matrix: Water**  
**Analysis Batch: 358740**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 358613**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	6.67	5.95		ug/L		89	80 - 120	7	20

**Lab Sample ID: 480-118337-18 MS**  
**Matrix: Water**  
**Analysis Batch: 358740**

**Client Sample ID: DUP-2**  
**Prep Type: Total/NA**  
**Prep Batch: 358613**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		6.67	6.60		ug/L		99	80 - 120

**Lab Sample ID: 480-118337-18 MSD**  
**Matrix: Water**  
**Analysis Batch: 358740**

**Client Sample ID: DUP-2**  
**Prep Type: Total/NA**  
**Prep Batch: 358613**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		6.67	6.63		ug/L		99	80 - 120	1	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-360222/28**  
**Matrix: Water**  
**Analysis Batch: 360222**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			06/02/17 22:47	1
Fluoride	ND		0.050		mg/L			06/02/17 22:47	1
Sulfate	ND		2.0		mg/L			06/02/17 22:47	1

**Lab Sample ID: LCS 480-360222/27**  
**Matrix: Water**  
**Analysis Batch: 360222**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.98		mg/L		104	90 - 110
Fluoride	5.00	5.17		mg/L		103	90 - 110
Sulfate	50.0	52.42		mg/L		105	90 - 110

**Lab Sample ID: 480-118337-4 MS**  
**Matrix: Water**  
**Analysis Batch: 360222**

**Client Sample ID: U-5D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.4		250	284.2		mg/L		102	81 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-118337-4 MS**  
**Matrix: Water**  
**Analysis Batch: 360222**

**Client Sample ID: U-5D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND		25.0	25.37		mg/L		101	82 - 120
Sulfate	30.5		250	287.5		mg/L		103	80 - 120

**Lab Sample ID: MB 480-360314/28**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			06/03/17 00:02	1
Fluoride	ND		0.050		mg/L			06/03/17 00:02	1
Sulfate	ND		2.0		mg/L			06/03/17 00:02	1

**Lab Sample ID: MB 480-360314/4**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			06/02/17 20:46	1
Fluoride	ND		0.050		mg/L			06/02/17 20:46	1
Sulfate	ND		2.0		mg/L			06/02/17 20:46	1

**Lab Sample ID: LCS 480-360314/27**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.12		mg/L		104	90 - 110
Fluoride	5.00	4.93		mg/L		99	90 - 110
Sulfate	50.0	54.11		mg/L		108	90 - 110

**Lab Sample ID: LCS 480-360314/3**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.32		mg/L		105	90 - 110
Fluoride	5.00	4.95		mg/L		99	90 - 110
Sulfate	50.0	54.28		mg/L		109	90 - 110

**Lab Sample ID: 480-118337-11 MS**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	47.6		250	309.2		mg/L		105	81 - 120
Fluoride	ND		25.0	25.13		mg/L		101	82 - 120
Sulfate	31.3		250	308.9		mg/L		111	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-118337-17 MS**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	43.5		250	298.5		mg/L		102	81 - 120
Fluoride	ND		25.0	24.57		mg/L		98	82 - 120
Sulfate	27.1		250	298.3		mg/L		108	80 - 120

**Lab Sample ID: 480-118337-17 MSD**  
**Matrix: Water**  
**Analysis Batch: 360314**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	43.5		250	310.8		mg/L		107	81 - 120	4	20
Fluoride	ND		25.0	25.78		mg/L		103	82 - 120	5	20
Sulfate	27.1		250	312.5		mg/L		114	80 - 120	5	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-358422/1**  
**Matrix: Water**  
**Analysis Batch: 358422**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/21/17 14:41	1

**Lab Sample ID: LCS 480-358422/2**  
**Matrix: Water**  
**Analysis Batch: 358422**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	507	505.0		mg/L		100	85 - 115

**Lab Sample ID: 480-118337-1 DU**  
**Matrix: Water**  
**Analysis Batch: 358422**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	430		432.0		mg/L		0.5	10

**Lab Sample ID: 480-118337-2 DU**  
**Matrix: Water**  
**Analysis Batch: 358422**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	403		394.0		mg/L		2	10

**Lab Sample ID: MB 480-358458/1**  
**Matrix: Water**  
**Analysis Batch: 358458**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/22/17 08:46	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: LCS 480-358458/2**  
**Matrix: Water**  
**Analysis Batch: 358458**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	504	497.0		mg/L		99	85 - 115

**Lab Sample ID: 480-118337-11 DU**  
**Matrix: Water**  
**Analysis Batch: 358458**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	449		427.0		mg/L		5	10

**Lab Sample ID: MB 480-358506/1**  
**Matrix: Water**  
**Analysis Batch: 358506**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/22/17 10:49	1

**Lab Sample ID: LCS 480-358506/2**  
**Matrix: Water**  
**Analysis Batch: 358506**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	504	469.0		mg/L		93	85 - 115

**Lab Sample ID: 480-118337-7 DU**  
**Matrix: Water**  
**Analysis Batch: 358506**

**Client Sample ID: D-3S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	425		438.0		mg/L		3	10

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-358601/1**  
**Matrix: Water**  
**Analysis Batch: 358601**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-358601/23**  
**Matrix: Water**  
**Analysis Batch: 358601**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 480-118337-5 DU

Matrix: Water

Analysis Batch: 358601

Client Sample ID: D-5S2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.4		SU		0.1	5
Temperature	19.2	HF	19.2		Degrees C		0	10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Metals

### Prep Batch: 358385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	3005A	
480-118337-2	U-4D	Total/NA	Water	3005A	
480-118337-3	U-5S	Total/NA	Water	3005A	
480-118337-4	U-5D	Total/NA	Water	3005A	
480-118337-9	D-1S	Total/NA	Water	3005A	
480-118337-10	D-1D	Total/NA	Water	3005A	
480-118337-11	D-2S	Total/NA	Water	3005A	
480-118337-12	D-2D	Total/NA	Water	3005A	
480-118337-13	D-4S	Total/NA	Water	3005A	
480-118337-14	D-4D	Total/NA	Water	3005A	
480-118337-15	D-8	Total/NA	Water	3005A	
480-118337-16	D-9	Total/NA	Water	3005A	
480-118337-17	DUP-1	Total/NA	Water	3005A	
480-118337-19	FIELD BLANK 1	Total/NA	Water	3005A	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	3005A	
MB 480-358385/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-358385/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-118337-1 MS	U-4S	Total/NA	Water	3005A	
480-118337-1 MSD	U-4S	Total/NA	Water	3005A	

### Prep Batch: 358430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	7470A	
480-118337-2	U-4D	Total/NA	Water	7470A	
480-118337-3	U-5S	Total/NA	Water	7470A	
480-118337-4	U-5D	Total/NA	Water	7470A	
480-118337-9	D-1S	Total/NA	Water	7470A	
480-118337-10	D-1D	Total/NA	Water	7470A	
480-118337-11	D-2S	Total/NA	Water	7470A	
480-118337-12	D-2D	Total/NA	Water	7470A	
480-118337-13	D-4S	Total/NA	Water	7470A	
480-118337-14	D-4D	Total/NA	Water	7470A	
480-118337-15	D-8	Total/NA	Water	7470A	
480-118337-16	D-9	Total/NA	Water	7470A	
480-118337-17	DUP-1	Total/NA	Water	7470A	
480-118337-19	FIELD BLANK 1	Total/NA	Water	7470A	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	7470A	
MB 480-358430/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-358430/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-118337-1 MS	U-4S	Total/NA	Water	7470A	
480-118337-1 MSD	U-4S	Total/NA	Water	7470A	

### Prep Batch: 358468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	3020A	
480-118337-2	U-4D	Total/NA	Water	3020A	
480-118337-3	U-5S	Total/NA	Water	3020A	
480-118337-4	U-5D	Total/NA	Water	3020A	
480-118337-9	D-1S	Total/NA	Water	3020A	
480-118337-10	D-1D	Total/NA	Water	3020A	
480-118337-11	D-2S	Total/NA	Water	3020A	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Metals (Continued)

### Prep Batch: 358468 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-12	D-2D	Total/NA	Water	3020A	
480-118337-13	D-4S	Total/NA	Water	3020A	
480-118337-14	D-4D	Total/NA	Water	3020A	
480-118337-15	D-8	Total/NA	Water	3020A	
480-118337-16	D-9	Total/NA	Water	3020A	
480-118337-17	DUP-1	Total/NA	Water	3020A	
480-118337-19	FIELD BLANK 1	Total/NA	Water	3020A	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	3020A	
MB 480-358468/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-358468/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-118337-13 MS	D-4S	Total/NA	Water	3020A	
480-118337-13 MSD	D-4S	Total/NA	Water	3020A	

### Prep Batch: 358574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	3005A	
480-118337-6	D-5D	Total/NA	Water	3005A	
480-118337-7	D-3S	Total/NA	Water	3005A	
480-118337-8	D-3D	Total/NA	Water	3005A	
480-118337-18	DUP-2	Total/NA	Water	3005A	
MB 480-358574/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-358574/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-118337-5 MS	D-5S2	Total/NA	Water	3005A	
480-118337-5 MSD	D-5S2	Total/NA	Water	3005A	

### Analysis Batch: 358577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	7470A	358430
480-118337-2	U-4D	Total/NA	Water	7470A	358430
480-118337-3	U-5S	Total/NA	Water	7470A	358430
480-118337-4	U-5D	Total/NA	Water	7470A	358430
480-118337-9	D-1S	Total/NA	Water	7470A	358430
480-118337-10	D-1D	Total/NA	Water	7470A	358430
480-118337-11	D-2S	Total/NA	Water	7470A	358430
480-118337-12	D-2D	Total/NA	Water	7470A	358430
480-118337-13	D-4S	Total/NA	Water	7470A	358430
480-118337-14	D-4D	Total/NA	Water	7470A	358430
480-118337-15	D-8	Total/NA	Water	7470A	358430
480-118337-16	D-9	Total/NA	Water	7470A	358430
480-118337-17	DUP-1	Total/NA	Water	7470A	358430
480-118337-19	FIELD BLANK 1	Total/NA	Water	7470A	358430
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	7470A	358430
MB 480-358430/1-A	Method Blank	Total/NA	Water	7470A	358430
LCS 480-358430/2-A	Lab Control Sample	Total/NA	Water	7470A	358430
480-118337-1 MS	U-4S	Total/NA	Water	7470A	358430
480-118337-1 MSD	U-4S	Total/NA	Water	7470A	358430

### Prep Batch: 358613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	7470A	
480-118337-6	D-5D	Total/NA	Water	7470A	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Metals (Continued)

### Prep Batch: 358613 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-7	D-3S	Total/NA	Water	7470A	
480-118337-8	D-3D	Total/NA	Water	7470A	
480-118337-18	DUP-2	Total/NA	Water	7470A	
MB 480-358613/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-358613/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCS 480-358613/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
480-118337-18 MS	DUP-2	Total/NA	Water	7470A	
480-118337-18 MSD	DUP-2	Total/NA	Water	7470A	

### Prep Batch: 358665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	3020A	
480-118337-6	D-5D	Total/NA	Water	3020A	
480-118337-7	D-3S	Total/NA	Water	3020A	
480-118337-8	D-3D	Total/NA	Water	3020A	
480-118337-18	DUP-2	Total/NA	Water	3020A	
MB 480-358665/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-358665/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-118337-6 MS	D-5D	Total/NA	Water	3020A	
480-118337-6 MSD	D-5D	Total/NA	Water	3020A	

### Analysis Batch: 358686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	6020A	358468
480-118337-2	U-4D	Total/NA	Water	6020A	358468
480-118337-3	U-5S	Total/NA	Water	6020A	358468
480-118337-4	U-5D	Total/NA	Water	6020A	358468
480-118337-9	D-1S	Total/NA	Water	6020A	358468
480-118337-10	D-1D	Total/NA	Water	6020A	358468
480-118337-11	D-2S	Total/NA	Water	6020A	358468
480-118337-12	D-2D	Total/NA	Water	6020A	358468
480-118337-13	D-4S	Total/NA	Water	6020A	358468
480-118337-14	D-4D	Total/NA	Water	6020A	358468
480-118337-15	D-8	Total/NA	Water	6020A	358468
480-118337-16	D-9	Total/NA	Water	6020A	358468
480-118337-17	DUP-1	Total/NA	Water	6020A	358468
480-118337-19	FIELD BLANK 1	Total/NA	Water	6020A	358468
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	6020A	358468
MB 480-358468/1-A	Method Blank	Total/NA	Water	6020A	358468
LCS 480-358468/2-A	Lab Control Sample	Total/NA	Water	6020A	358468
480-118337-13 MS	D-4S	Total/NA	Water	6020A	358468
480-118337-13 MSD	D-4S	Total/NA	Water	6020A	358468

### Analysis Batch: 358740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	7470A	358613
480-118337-6	D-5D	Total/NA	Water	7470A	358613
480-118337-7	D-3S	Total/NA	Water	7470A	358613
480-118337-8	D-3D	Total/NA	Water	7470A	358613
480-118337-18	DUP-2	Total/NA	Water	7470A	358613
MB 480-358613/1-A	Method Blank	Total/NA	Water	7470A	358613

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Metals (Continued)

### Analysis Batch: 358740 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-358613/2-A	Lab Control Sample	Total/NA	Water	7470A	358613
LCSD 480-358613/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	358613
480-118337-18 MS	DUP-2	Total/NA	Water	7470A	358613
480-118337-18 MSD	DUP-2	Total/NA	Water	7470A	358613

### Analysis Batch: 358886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	6020A	358665
480-118337-6	D-5D	Total/NA	Water	6020A	358665
480-118337-7	D-3S	Total/NA	Water	6020A	358665
480-118337-8	D-3D	Total/NA	Water	6020A	358665
480-118337-18	DUP-2	Total/NA	Water	6020A	358665
MB 480-358665/1-A	Method Blank	Total/NA	Water	6020A	358665
LCS 480-358665/2-A	Lab Control Sample	Total/NA	Water	6020A	358665
480-118337-6 MS	D-5D	Total/NA	Water	6020A	358665
480-118337-6 MSD	D-5D	Total/NA	Water	6020A	358665

### Analysis Batch: 359101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-358665/2-A	Lab Control Sample	Total/NA	Water	6020A	358665

### Analysis Batch: 359320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	6010C	358385
480-118337-2	U-4D	Total/NA	Water	6010C	358385
480-118337-3	U-5S	Total/NA	Water	6010C	358385
480-118337-4	U-5D	Total/NA	Water	6010C	358385
480-118337-9	D-1S	Total/NA	Water	6010C	358385
480-118337-10	D-1D	Total/NA	Water	6010C	358385
480-118337-11	D-2S	Total/NA	Water	6010C	358385
480-118337-12	D-2D	Total/NA	Water	6010C	358385
480-118337-13	D-4S	Total/NA	Water	6010C	358385
480-118337-14	D-4D	Total/NA	Water	6010C	358385
480-118337-15	D-8	Total/NA	Water	6010C	358385
480-118337-16	D-9	Total/NA	Water	6010C	358385
480-118337-17	DUP-1	Total/NA	Water	6010C	358385
480-118337-19	FIELD BLANK 1	Total/NA	Water	6010C	358385
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	6010C	358385
MB 480-358385/1-A	Method Blank	Total/NA	Water	6010C	358385
LCS 480-358385/2-A	Lab Control Sample	Total/NA	Water	6010C	358385
480-118337-1 MS	U-4S	Total/NA	Water	6010C	358385
480-118337-1 MSD	U-4S	Total/NA	Water	6010C	358385

### Analysis Batch: 359554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-17	DUP-1	Total/NA	Water	6010C	358385

### Analysis Batch: 359572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	6010C	358574
480-118337-6	D-5D	Total/NA	Water	6010C	358574

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Metals (Continued)

### Analysis Batch: 359572 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-7	D-3S	Total/NA	Water	6010C	358574
480-118337-8	D-3D	Total/NA	Water	6010C	358574
480-118337-18	DUP-2	Total/NA	Water	6010C	358574
MB 480-358574/1-A	Method Blank	Total/NA	Water	6010C	358574
LCS 480-358574/2-A	Lab Control Sample	Total/NA	Water	6010C	358574
480-118337-5 MS	D-5S2	Total/NA	Water	6010C	358574
480-118337-5 MSD	D-5S2	Total/NA	Water	6010C	358574

## General Chemistry

### Analysis Batch: 358422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	SM 2540C	
480-118337-2	U-4D	Total/NA	Water	SM 2540C	
480-118337-3	U-5S	Total/NA	Water	SM 2540C	
480-118337-4	U-5D	Total/NA	Water	SM 2540C	
480-118337-17	DUP-1	Total/NA	Water	SM 2540C	
MB 480-358422/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-358422/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-118337-1 DU	U-4S	Total/NA	Water	SM 2540C	
480-118337-2 DU	U-4D	Total/NA	Water	SM 2540C	

### Analysis Batch: 358458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-9	D-1S	Total/NA	Water	SM 2540C	
480-118337-10	D-1D	Total/NA	Water	SM 2540C	
480-118337-11	D-2S	Total/NA	Water	SM 2540C	
480-118337-12	D-2D	Total/NA	Water	SM 2540C	
480-118337-13	D-4S	Total/NA	Water	SM 2540C	
480-118337-14	D-4D	Total/NA	Water	SM 2540C	
480-118337-15	D-8	Total/NA	Water	SM 2540C	
480-118337-16	D-9	Total/NA	Water	SM 2540C	
480-118337-19	FIELD BLANK 1	Total/NA	Water	SM 2540C	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-358458/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-358458/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-118337-11 DU	D-2S	Total/NA	Water	SM 2540C	

### Analysis Batch: 358506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	SM 2540C	
480-118337-6	D-5D	Total/NA	Water	SM 2540C	
480-118337-7	D-3S	Total/NA	Water	SM 2540C	
480-118337-8	D-3D	Total/NA	Water	SM 2540C	
480-118337-18	DUP-2	Total/NA	Water	SM 2540C	
MB 480-358506/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-358506/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-118337-7 DU	D-3S	Total/NA	Water	SM 2540C	

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## General Chemistry (Continued)

### Analysis Batch: 358601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	SM 4500 H+ B	
480-118337-2	U-4D	Total/NA	Water	SM 4500 H+ B	
480-118337-3	U-5S	Total/NA	Water	SM 4500 H+ B	
480-118337-4	U-5D	Total/NA	Water	SM 4500 H+ B	
480-118337-5	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-118337-6	D-5D	Total/NA	Water	SM 4500 H+ B	
480-118337-7	D-3S	Total/NA	Water	SM 4500 H+ B	
480-118337-8	D-3D	Total/NA	Water	SM 4500 H+ B	
480-118337-9	D-1S	Total/NA	Water	SM 4500 H+ B	
480-118337-10	D-1D	Total/NA	Water	SM 4500 H+ B	
480-118337-11	D-2S	Total/NA	Water	SM 4500 H+ B	
480-118337-12	D-2D	Total/NA	Water	SM 4500 H+ B	
480-118337-13	D-4S	Total/NA	Water	SM 4500 H+ B	
480-118337-14	D-4D	Total/NA	Water	SM 4500 H+ B	
480-118337-15	D-8	Total/NA	Water	SM 4500 H+ B	
480-118337-16	D-9	Total/NA	Water	SM 4500 H+ B	
480-118337-17	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-118337-18	DUP-2	Total/NA	Water	SM 4500 H+ B	
480-118337-19	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 480-358601/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-358601/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-118337-5 DU	D-5S2	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 360222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	300.0	
480-118337-2	U-4D	Total/NA	Water	300.0	
480-118337-3	U-5S	Total/NA	Water	300.0	
480-118337-4	U-5D	Total/NA	Water	300.0	
MB 480-360222/28	Method Blank	Total/NA	Water	300.0	
LCS 480-360222/27	Lab Control Sample	Total/NA	Water	300.0	
480-118337-4 MS	U-5D	Total/NA	Water	300.0	

### Analysis Batch: 360314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-5	D-5S2	Total/NA	Water	300.0	
480-118337-6	D-5D	Total/NA	Water	300.0	
480-118337-7	D-3S	Total/NA	Water	300.0	
480-118337-8	D-3D	Total/NA	Water	300.0	
480-118337-9	D-1S	Total/NA	Water	300.0	
480-118337-10	D-1D	Total/NA	Water	300.0	
480-118337-11	D-2S	Total/NA	Water	300.0	
480-118337-12	D-2D	Total/NA	Water	300.0	
480-118337-13	D-4S	Total/NA	Water	300.0	
480-118337-14	D-4D	Total/NA	Water	300.0	
480-118337-15	D-8	Total/NA	Water	300.0	
480-118337-16	D-9	Total/NA	Water	300.0	
480-118337-17	DUP-1	Total/NA	Water	300.0	
480-118337-18	DUP-2	Total/NA	Water	300.0	
480-118337-19	FIELD BLANK 1	Total/NA	Water	300.0	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## General Chemistry (Continued)

### Analysis Batch: 360314 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	300.0	
MB 480-360314/28	Method Blank	Total/NA	Water	300.0	
MB 480-360314/4	Method Blank	Total/NA	Water	300.0	
LCS 480-360314/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-360314/3	Lab Control Sample	Total/NA	Water	300.0	
480-118337-11 MS	D-2S	Total/NA	Water	300.0	
480-118337-17 MS	DUP-1	Total/NA	Water	300.0	
480-118337-17 MSD	DUP-1	Total/NA	Water	300.0	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: U-4S

Date Collected: 05/15/17 10:00

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:06	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/22/17 23:48	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 11:46	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360222	06/03/17 02:41	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358422	05/21/17 14:41	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 18:45	ALZ	TAL BUF

## Client Sample ID: U-4D

Date Collected: 05/15/17 10:15

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:23	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/22/17 23:53	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 11:53	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360222	06/03/17 02:55	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358422	05/21/17 14:41	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 18:48	ALZ	TAL BUF

## Client Sample ID: U-5S

Date Collected: 05/15/17 11:05

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:27	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/22/17 23:59	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 11:54	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360222	06/03/17 03:10	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358422	05/21/17 14:41	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 18:51	ALZ	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

**Client Sample ID: U-5D**

**Date Collected: 05/15/17 11:15**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:41	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:04	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 11:56	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360222	06/03/17 03:24	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358422	05/21/17 14:41	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 18:54	ALZ	TAL BUF

**Client Sample ID: D-5S2**

**Date Collected: 05/15/17 12:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358574	05/22/17 09:45	MJW	TAL BUF
Total/NA	Analysis	6010C		1	359572	05/26/17 18:45	LMH	TAL BUF
Total/NA	Prep	3020A			358665	05/23/17 10:45	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	358886	05/23/17 16:40	TRB	TAL BUF
Total/NA	Prep	7470A			358613	05/23/17 08:15	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	358740	05/23/17 13:16	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 22:32	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358506	05/22/17 10:49	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 18:57	ALZ	TAL BUF

**Client Sample ID: D-5D**

**Date Collected: 05/15/17 12:15**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358574	05/22/17 09:45	MJW	TAL BUF
Total/NA	Analysis	6010C		1	359572	05/26/17 19:12	LMH	TAL BUF
Total/NA	Prep	3020A			358665	05/23/17 10:45	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	358886	05/23/17 17:03	TRB	TAL BUF
Total/NA	Prep	7470A			358613	05/23/17 08:15	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	358740	05/23/17 13:18	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 22:40	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358506	05/22/17 10:49	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:03	ALZ	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-3S

Date Collected: 05/15/17 13:00

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358574	05/22/17 09:45	MJW	TAL BUF
Total/NA	Analysis	6010C		1	359572	05/26/17 19:16	LMH	TAL BUF
Total/NA	Prep	3020A			358665	05/23/17 10:45	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	358886	05/23/17 17:31	TRB	TAL BUF
Total/NA	Prep	7470A			358613	05/23/17 08:15	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	358740	05/23/17 13:20	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 22:49	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358506	05/22/17 10:49	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:06	ALZ	TAL BUF

## Client Sample ID: D-3D

Date Collected: 05/15/17 13:10

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358574	05/22/17 09:45	MJW	TAL BUF
Total/NA	Analysis	6010C		1	359572	05/26/17 19:19	LMH	TAL BUF
Total/NA	Prep	3020A			358665	05/23/17 10:45	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	358886	05/23/17 17:36	TRB	TAL BUF
Total/NA	Prep	7470A			358613	05/23/17 08:15	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	358740	05/23/17 13:22	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 22:57	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358506	05/22/17 10:49	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:09	ALZ	TAL BUF

## Client Sample ID: D-1S

Date Collected: 05/16/17 08:30

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:44	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:10	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 11:58	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 23:05	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:12	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-1D

**Lab Sample ID: 480-118337-10**

Date Collected: 05/16/17 08:40

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:48	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:15	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:03	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 23:13	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:18	ALZ	TAL BUF

## Client Sample ID: D-2S

**Lab Sample ID: 480-118337-11**

Date Collected: 05/16/17 09:30

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:51	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:21	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:04	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/02/17 23:21	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:21	ALZ	TAL BUF

## Client Sample ID: D-2D

**Lab Sample ID: 480-118337-12**

Date Collected: 05/16/17 09:40

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:54	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:26	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:06	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:10	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:24	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-4S

Date Collected: 05/16/17 10:25

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 14:58	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 00:49	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:07	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:18	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:27	ALZ	TAL BUF

## Client Sample ID: D-4D

Date Collected: 05/16/17 10:35

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:01	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 01:17	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:10	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:26	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:30	ALZ	TAL BUF

## Client Sample ID: D-8

Date Collected: 05/16/17 11:20

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:05	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 01:22	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:12	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:34	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:33	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: D-9

Date Collected: 05/16/17 11:50

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:08	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 01:28	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:14	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:42	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:36	ALZ	TAL BUF

## Client Sample ID: DUP-1

Date Collected: 05/15/17 00:00

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:22	LMH	TAL BUF
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359554	05/26/17 14:51	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 01:33	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:16	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 00:51	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358422	05/21/17 14:41	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:38	ALZ	TAL BUF

## Client Sample ID: DUP-2

Date Collected: 05/15/17 00:00

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358574	05/22/17 09:45	MJW	TAL BUF
Total/NA	Analysis	6010C		1	359572	05/26/17 19:23	LMH	TAL BUF
Total/NA	Prep	3020A			358665	05/23/17 10:45	MVZ	TAL BUF
Total/NA	Analysis	6020A		1	358886	05/23/17 17:42	TRB	TAL BUF
Total/NA	Prep	7470A			358613	05/23/17 08:15	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	358740	05/23/17 13:24	JRK	TAL BUF
Total/NA	Analysis	300.0		5	360314	06/03/17 01:31	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358506	05/22/17 10:49	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:41	ALZ	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-118337-19

Date Collected: 05/16/17 12:00

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:26	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 01:39	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:18	JRK	TAL BUF
Total/NA	Analysis	300.0		1	360314	06/03/17 01:39	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:44	ALZ	TAL BUF

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-118337-20

Date Collected: 05/16/17 12:05

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			358385	05/20/17 08:50	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	359320	05/25/17 15:29	LMH	TAL BUF
Total/NA	Prep	3020A			358468	05/22/17 09:44	MJW	TAL BUF
Total/NA	Analysis	6020A		1	358686	05/23/17 02:02	TRB	TAL BUF
Total/NA	Prep	7470A			358430	05/22/17 07:30	JRK	TAL BUF
Total/NA	Analysis	7470A		1	358577	05/22/17 12:20	JRK	TAL BUF
Total/NA	Analysis	300.0		1	360314	06/03/17 01:48	DMR	TAL BUF
Total/NA	Analysis	SM 2540C		1	358458	05/22/17 08:46	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	358601	05/22/17 19:50	ALZ	TAL BUF

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-118337-1	U-4S	Water	05/15/17 10:00	05/20/17 09:30
480-118337-2	U-4D	Water	05/15/17 10:15	05/20/17 09:30
480-118337-3	U-5S	Water	05/15/17 11:05	05/20/17 09:30
480-118337-4	U-5D	Water	05/15/17 11:15	05/20/17 09:30
480-118337-5	D-5S2	Water	05/15/17 12:00	05/20/17 09:30
480-118337-6	D-5D	Water	05/15/17 12:15	05/20/17 09:30
480-118337-7	D-3S	Water	05/15/17 13:00	05/20/17 09:30
480-118337-8	D-3D	Water	05/15/17 13:10	05/20/17 09:30
480-118337-9	D-1S	Water	05/16/17 08:30	05/20/17 09:30
480-118337-10	D-1D	Water	05/16/17 08:40	05/20/17 09:30
480-118337-11	D-2S	Water	05/16/17 09:30	05/20/17 09:30
480-118337-12	D-2D	Water	05/16/17 09:40	05/20/17 09:30
480-118337-13	D-4S	Water	05/16/17 10:25	05/20/17 09:30
480-118337-14	D-4D	Water	05/16/17 10:35	05/20/17 09:30
480-118337-15	D-8	Water	05/16/17 11:20	05/20/17 09:30
480-118337-16	D-9	Water	05/16/17 11:50	05/20/17 09:30
480-118337-17	DUP-1	Water	05/15/17 00:00	05/20/17 09:30
480-118337-18	DUP-2	Water	05/15/17 00:00	05/20/17 09:30
480-118337-19	FIELD BLANK 1	Water	05/16/17 12:00	05/20/17 09:30
480-118337-20	EQUIPMENT BLANK	Water	05/16/17 12:05	05/20/17 09:30



Amherst, NY 14228-2223  
phone 716.681.2600 fax 716.681.7901

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1548 FAX  
Project Name: RSMNT 2017 CCR GW Event 4  
Site:  
P O # 3063-17-00633

**Regulatory Program:**  DW  NPDES  RCRA  Other:  
Project Manager: Ryan Van Datta  
Tel/Fax:  
Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact:** Nathaniel Belneman  
Date:  
Carrier:  
Lab Contact:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Composite, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total) + Mercury	Radium 226 & 228 combined	Pb	Cadmium	Chloride	Fluoride	TS	Sample Specific Notes:
V-45	5/15/17	10:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
V-4D	5/15/17	10:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	
V-55	5/15/17	11:05	Grab	Water	5	X	X	X	X	X	X	X	X	X	
V-5D	5/15/17	11:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	
DUPLICATE #1	5/15/17	-	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-55Z	5/15/17	12:06	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-5D	5/15/17	12:15	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-3S	5/15/17	13:00	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-3D	5/15/17	13:10	Grab	Water	5	X	X	X	X	X	X	X	X	X	
DUPLICATE #2	5/15/17	-	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-1S	5/16/17	8:30	Grab	Water	5	X	X	X	X	X	X	X	X	X	
D-1D	5/16/17	8:40	Grab	Water	5	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Unknown  
 Return to Client  Disposal by Lab  Archive for Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Received by: [Signature]  
Date/Time: 5-18-17  
Received in Laboratory by: [Signature]  
Date/Time: 5-18-17

Company: CES  
Company: [Signature]  
Company: [Signature]

Custody Seal Intact:  Yes  No  
Custody Seal No.:  
Relinquished by: [Signature]  
Relinquished by: [Signature]  
Relinquished by: [Signature]

Therm ID No.:  
Date/Time: 5-18-17 134  
Date/Time: 5/17/17 0930  
Date/Time:

Amherst, NY 14228-2223  
phone 716.691.2800 fax 716.691.7991

Regulatory Program:  DW  NPDES  ROA  Other:

Project Manager: Ryan Van Dette

Site Contact: Nathaniel Belneman

Carrier: \_\_\_\_\_

Client Contact  
Tel/Fax: \_\_\_\_\_

SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CGR GW Event 4  
Site:  
P O # 3083-17-00633

COC No: 1 of 2 COCs

Sampler: \_\_\_\_\_  
For Lab Use Only:  
Walk-In Client: \_\_\_\_\_  
Lab Sampling: \_\_\_\_\_  
Job / SDG No.: \_\_\_\_\_

Sample Specific Notes: \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Sample Type (G=Grab, C=Composite, O=Other)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (total)+ Mercury	Radium 226 & 228 combined	Zn	Sulfate	Chloride	Fluoride	TDS
D-2S	5/16/17	9:30	Grab	Water	5		X	X	X	X	X	X	X	X
D-2D	5/16/17	9:40	Grab	Water	5		X	X	X	X	X	X	X	X
D-4S	5/16/17	10:25	Grab	Water	5		X	X	X	X	X	X	X	X
D-4D	5/16/17	10:35	Grab	Water	5		X	X	X	X	X	X	X	X
D-8	5/16/17	11:30	Grab	Water	5		X	X	X	X	X	X	X	X
D-9	5/16/17	11:50	Grab	Water	5		X	X	X	X	X	X	X	X
Field Blank	5/16/17	12:00	Grab	Water	5		X	X	X	X	X	X	X	X
Equipment Blank	5/16/17	12:05	Grab	Water	5		X	X	X	X	X	X	X	X

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Unknown   
 Return to Client  Disposed by Lab  Archive for Months \_\_\_\_\_

Custody Seals Intact: Yes  No

Relinquished by: *[Signature]* Company: *ES* Date/Time: \_\_\_\_\_  
 Relinquished by: *[Signature]* Company: *FA* Date/Time: 5-18-17  
 Relinquished by: *[Signature]* Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by: *[Signature]* Company: *A* Date/Time: 5-18-17  
 Received in Laboratory by: *[Signature]* Company: \_\_\_\_\_ Date/Time: 5/20/17

Therm ID No.: \_\_\_\_\_ Cooler Temp. (°C): \_\_\_\_\_ Obs'd: \_\_\_\_\_



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-118337-1

**Login Number: 118337**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	





# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-118337-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

6/22/2017 8:25:06 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Job ID: 480-118337-2

### Laboratory: TestAmerica Buffalo

#### Narrative

#### Job Narrative 480-118337-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 5/20/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.0° C, 2.2° C, 2.4° C and 2.5° C.

#### Receipt Exceptions

The following samples were listed on the Chain of Custody (COC); however, no samples were received: D-5S2 (480-118337-5), D-5D (480-118337-6), D-3S (480-118337-7), D-3D (480-118337-8) and DUP-2 (480-118337-18).

#### RAD

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-311313: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision: U-4S (480-118337-1), U-4D (480-118337-2), U-5S (480-118337-3), U-5D (480-118337-4), D-5S2 (480-118337-5), D-5D (480-118337-6), D-3S (480-118337-7), D-3D (480-118337-8), D-1S (480-118337-9), D-1D (480-118337-10), D-2S (480-118337-11), D-2D (480-118337-12), D-4S (480-118337-13), D-4D (480-118337-14), D-8 (480-118337-15), D-9 (480-118337-16), DUP-1 (480-118337-17), DUP-2 (480-118337-18), FIELD BLANK 1 (480-118337-19) and EQUIPMENT BLANK (480-118337-20).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-311304: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision: U-4S (480-118337-1), U-4D (480-118337-2), U-5S (480-118337-3), U-5D (480-118337-4), D-5S2 (480-118337-5), D-5D (480-118337-6), D-3S (480-118337-7), D-3D (480-118337-8), D-1S (480-118337-9), D-1D (480-118337-10), D-2S (480-118337-11), D-2D (480-118337-12), D-4S (480-118337-13), D-4D (480-118337-14), D-8 (480-118337-15), D-9 (480-118337-16), DUP-1 (480-118337-17), DUP-2 (480-118337-18), FIELD BLANK 1 (480-118337-19) and EQUIPMENT BLANK (480-118337-20).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: U-4S**

**Lab Sample ID: 480-118337-1**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-118337-2**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-118337-3**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-118337-4**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-118337-5**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-118337-6**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-118337-7**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-118337-8**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-118337-9**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-118337-10**

No Detections.

**Client Sample ID: D-2S**

**Lab Sample ID: 480-118337-11**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-118337-12**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-118337-13**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-118337-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-8**

**Lab Sample ID: 480-118337-15**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-118337-16**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-118337-17**

No Detections.

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-118337-18**

No Detections.

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-118337-19**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-118337-20**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: U-4S**  
**Date Collected: 05/15/17 10:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-1**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0766	0.0774	1.00	0.0953	pCi/L	05/31/17 09:28	06/22/17 08:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					05/31/17 09:28	06/22/17 08:10	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.177	U	0.227	0.227	1.00	0.376	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	82.6		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.304	U	0.239	0.240	5.00	0.376	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: U-4D**  
**Date Collected: 05/15/17 10:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-2**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00237	U	0.0470	0.0470	1.00	0.102	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0601	U	0.170	0.171	1.00	0.326	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	88.6		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0625	U	0.177	0.177	5.00	0.326	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: U-5S**  
**Date Collected: 05/15/17 11:05**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-3**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0910	U	0.0685	0.0690	1.00	0.0945	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.342		0.224	0.226	1.00	0.341	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	85.6		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.433		0.235	0.237	5.00	0.341	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: U-5D**  
**Date Collected: 05/15/17 11:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-4**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0226	U	0.0497	0.0498	1.00	0.116	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.155	U	0.227	0.228	1.00	0.381	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	84.9		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.133	U	0.233	0.233	5.00	0.381	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-5S2**  
**Date Collected: 05/15/17 12:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-5**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0797	U	0.0713	0.0716	1.00	0.108	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0716	U	0.235	0.235	1.00	0.409	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	83.7		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.151	U	0.246	0.246	5.00	0.409	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-5D**  
**Date Collected: 05/15/17 12:15**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-6**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0315	U	0.0500	0.0501	1.00	0.0875	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.349	U	0.230	0.232	1.00	0.352	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	88.2		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Combined Radium 226 + 228</b>	<b>0.381</b>		0.235	0.237	5.00	0.352	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-3S**  
**Date Collected: 05/15/17 13:00**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-7**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0108	U	0.0463	0.0463	1.00	0.105	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0701	U	0.192	0.192	1.00	0.334	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	88.6		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0592	U	0.197	0.197	5.00	0.334	pCi/L		06/22/17 12:52	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-3D**  
**Date Collected: 05/15/17 13:10**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-8**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0170	U	0.0476	0.0476	1.00	0.0924	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.525		0.242	0.247	1.00	0.343	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	88.2		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.542		0.247	0.252	5.00	0.343	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-1S**  
**Date Collected: 05/16/17 08:30**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-9**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0303	U	0.0632	0.0633	1.00	0.114	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.476		0.234	0.238	1.00	0.339	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	86.0		40 - 110					05/31/17 09:59	06/13/17 11:01	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.507		0.242	0.246	5.00	0.339	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-1D**  
**Date Collected: 05/16/17 08:40**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-10**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0505	U	0.0691	0.0692	1.00	0.116	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.335	U	0.234	0.236	1.00	0.362	pCi/L	05/31/17 09:59	06/13/17 11:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					05/31/17 09:59	06/13/17 11:05	1
Y Carrier	87.1		40 - 110					05/31/17 09:59	06/13/17 11:05	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.385		0.244	0.246	5.00	0.362	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-2S**  
**Date Collected: 05/16/17 09:30**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-11**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0589	U	0.0640	0.0642	1.00	0.102	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0780	U	0.213	0.214	1.00	0.370	pCi/L	05/31/17 09:59	06/13/17 11:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					05/31/17 09:59	06/13/17 11:05	1
Y Carrier	86.4		40 - 110					05/31/17 09:59	06/13/17 11:05	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.137	U	0.223	0.223	5.00	0.370	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-2D**  
**Date Collected: 05/16/17 09:40**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-12**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0140	U	0.0486	0.0486	1.00	0.0955	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					05/31/17 09:28	06/22/17 08:11	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.428	U	0.312	0.314	1.00	0.493	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	87.1		40 - 110					05/31/17 09:59	06/13/17 11:06	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.442	U	0.316	0.318	5.00	0.493	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-4S**

**Lab Sample ID: 480-118337-13**

**Date Collected: 05/16/17 10:25**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0355	U	0.0597	0.0597	1.00	0.105	pCi/L	05/31/17 09:28	06/22/17 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					05/31/17 09:28	06/22/17 08:11	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.221	U	0.196	0.197	1.00	0.395	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	86.7		40 - 110					05/31/17 09:59	06/13/17 11:06	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.185	U	0.205	0.206	5.00	0.395	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-4D**  
**Date Collected: 05/16/17 10:35**  
**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-14**  
**Matrix: Water**

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0344	U	0.0694	0.0694	1.00	0.124	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					05/31/17 09:28	06/22/17 08:16	1

### Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.188	U	0.232	0.232	1.00	0.443	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	88.2		40 - 110					05/31/17 09:59	06/13/17 11:06	1

### Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.153	U	0.242	0.243	5.00	0.443	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-8**

**Lab Sample ID: 480-118337-15**

**Date Collected: 05/16/17 11:20**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0830	U	0.0708	0.0712	1.00	0.105	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.7		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.135	U	0.249	0.249	1.00	0.423	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.7		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	88.2		40 - 110					05/31/17 09:59	06/13/17 11:06	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.218	U	0.259	0.259	5.00	0.423	pCi/L		06/22/17 12:52	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-9**

**Lab Sample ID: 480-118337-16**

**Date Collected: 05/16/17 11:50**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0169	U	0.0563	0.0563	1.00	0.123	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.107	U	0.289	0.289	1.00	0.497	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	81.9		40 - 110					05/31/17 09:59	06/13/17 11:06	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0899	U	0.294	0.294	5.00	0.497	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: DUP-1**

**Date Collected: 05/15/17 00:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-17**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0689	U	0.0773	0.0775	1.00	0.125	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00910	U	0.245	0.245	1.00	0.436	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	87.1		40 - 110					05/31/17 09:59	06/13/17 11:06	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0780	U	0.257	0.257	5.00	0.436	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-118337-18**

**Date Collected: 05/15/17 00:00**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0451	U	0.0654	0.0655	1.00	0.111	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0231	U	0.252	0.252	1.00	0.446	pCi/L	05/31/17 09:59	06/13/17 11:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/31/17 09:59	06/13/17 11:06	1
Y Carrier	87.1		40 - 110					05/31/17 09:59	06/13/17 11:06	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0683	U	0.260	0.260	5.00	0.446	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-118337-19**

**Date Collected: 05/16/17 12:00**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0323	U	0.0449	0.0450	1.00	0.114	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.251	U	0.243	0.244	1.00	0.393	pCi/L	05/31/17 09:59	06/13/17 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/31/17 09:59	06/13/17 11:07	1
Y Carrier	89.3		40 - 110					05/31/17 09:59	06/13/17 11:07	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.218	U	0.247	0.248	5.00	0.393	pCi/L		06/22/17 12:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-118337-20**

**Date Collected: 05/16/17 12:05**

**Matrix: Water**

**Date Received: 05/20/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0310	U	0.0481	0.0482	1.00	0.118	pCi/L	05/31/17 09:28	06/22/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					05/31/17 09:28	06/22/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.157	U	0.219	0.219	1.00	0.424	pCi/L	05/31/17 09:59	06/13/17 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					05/31/17 09:59	06/13/17 11:07	1
Y Carrier	82.6		40 - 110					05/31/17 09:59	06/13/17 11:07	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.188	U	0.224	0.225	5.00	0.424	pCi/L		06/22/17 12:52	1

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
480-118337-1	U-4S	96.8	82.6
480-118337-2	U-4D	93.8	88.6
480-118337-3	U-5S	91.4	85.6
480-118337-4	U-5D	92.0	84.9
480-118337-5	D-5S2	95.9	83.7
480-118337-6	D-5D	93.5	88.2
480-118337-7	D-3S	94.4	88.6
480-118337-8	D-3D	91.4	88.2
480-118337-9	D-1S	97.6	86.0
480-118337-10	D-1D	92.0	87.1
480-118337-11	D-2S	92.9	86.4
480-118337-12	D-2D	93.2	87.1
480-118337-13	D-4S	90.3	86.7
480-118337-14	D-4D	91.7	88.2
480-118337-15	D-8	86.7	88.2
480-118337-16	D-9	87.6	81.9
480-118337-17	DUP-1	90.0	
480-118337-18	DUP-2	90.6	
480-118337-19	FIELD BLANK 1	89.4	
480-118337-20	EQUIPMENT BLANK	89.1	
LCS 160-311304/2-A	Lab Control Sample	99.1	
LCS 160-311304/3-A	Lab Control Sample Dup	95.6	
MB 160-311304/1-A	Method Blank	91.2	

**Tracer/Carrier Legend**

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
480-118337-1	U-4S	96.8	82.6
480-118337-2	U-4D	93.8	88.6
480-118337-3	U-5S	91.4	85.6
480-118337-4	U-5D	92.0	84.9
480-118337-5	D-5S2	95.9	83.7
480-118337-6	D-5D	93.5	88.2
480-118337-7	D-3S	94.4	88.6
480-118337-8	D-3D	91.4	88.2
480-118337-9	D-1S	97.6	86.0
480-118337-10	D-1D	92.0	87.1
480-118337-11	D-2S	92.9	86.4
480-118337-12	D-2D	93.2	87.1
480-118337-13	D-4S	90.3	86.7
480-118337-14	D-4D	91.7	88.2
480-118337-15	D-8	86.7	88.2
480-118337-16	D-9	87.6	81.9

TestAmerica Buffalo

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-118337-17	DUP-1	90.0	87.1
480-118337-18	DUP-2	90.6	87.1
480-118337-19	FIELD BLANK 1	89.4	89.3
480-118337-20	EQUIPMENT BLANK	89.1	82.6
LCS 160-311313/2-A	Lab Control Sample	99.1	83.7
LCSD 160-311313/3-A	Lab Control Sample Dup	95.6	87.1
MB 160-311313/1-A	Method Blank	91.2	83.0

### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-311304/1-A**  
**Matrix: Water**  
**Analysis Batch: 314645**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 311304**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.008050	U	0.0379	0.0379	1.00	0.0892	pCi/L	05/31/17 09:28	06/22/17 08:10	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					05/31/17 09:28	06/22/17 08:10	1

**Lab Sample ID: LCS 160-311304/2-A**  
**Matrix: Water**  
**Analysis Batch: 314645**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 311304**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	8.461		0.907	1.00	0.100	pCi/L	74	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	99.1		40 - 110						

**Lab Sample ID: LCSD 160-311304/3-A**  
**Matrix: Water**  
**Analysis Batch: 314645**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 311304**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	10.37		1.09	1.00	0.0873	pCi/L	91	68 - 137	0.96	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	95.6		40 - 110								

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-311313/1-A**  
**Matrix: Water**  
**Analysis Batch: 313170**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 311313**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2738	U	0.231	0.233	1.00	0.368	pCi/L	05/31/17 09:59	06/13/17 11:01	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					05/31/17 09:59	06/13/17 11:01	1
Y Carrier	83.0		40 - 110					05/31/17 09:59	06/13/17 11:01	1

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-311313/2-A**  
**Matrix: Water**  
**Analysis Batch: 313170**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 311313**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	13.3	13.78		1.48	1.00	0.332	pCi/L	103	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	83.7		40 - 110

**Lab Sample ID: LCSD 160-311313/3-A**  
**Matrix: Water**  
**Analysis Batch: 313170**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 311313**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	13.3	14.97		1.59	1.00	0.351	pCi/L	112	56 - 140	0.39	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	95.6		40 - 110
Y Carrier	87.1		40 - 110

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Rad

### Prep Batch: 311304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	PrecSep-21	
480-118337-2	U-4D	Total/NA	Water	PrecSep-21	
480-118337-3	U-5S	Total/NA	Water	PrecSep-21	
480-118337-4	U-5D	Total/NA	Water	PrecSep-21	
480-118337-5	D-5S2	Total/NA	Water	PrecSep-21	
480-118337-6	D-5D	Total/NA	Water	PrecSep-21	
480-118337-7	D-3S	Total/NA	Water	PrecSep-21	
480-118337-8	D-3D	Total/NA	Water	PrecSep-21	
480-118337-9	D-1S	Total/NA	Water	PrecSep-21	
480-118337-10	D-1D	Total/NA	Water	PrecSep-21	
480-118337-11	D-2S	Total/NA	Water	PrecSep-21	
480-118337-12	D-2D	Total/NA	Water	PrecSep-21	
480-118337-13	D-4S	Total/NA	Water	PrecSep-21	
480-118337-14	D-4D	Total/NA	Water	PrecSep-21	
480-118337-15	D-8	Total/NA	Water	PrecSep-21	
480-118337-16	D-9	Total/NA	Water	PrecSep-21	
480-118337-17	DUP-1	Total/NA	Water	PrecSep-21	
480-118337-18	DUP-2	Total/NA	Water	PrecSep-21	
480-118337-19	FIELD BLANK 1	Total/NA	Water	PrecSep-21	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	PrecSep-21	
MB 160-311304/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-311304/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-311304/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 311313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-118337-1	U-4S	Total/NA	Water	PrecSep_0	
480-118337-2	U-4D	Total/NA	Water	PrecSep_0	
480-118337-3	U-5S	Total/NA	Water	PrecSep_0	
480-118337-4	U-5D	Total/NA	Water	PrecSep_0	
480-118337-5	D-5S2	Total/NA	Water	PrecSep_0	
480-118337-6	D-5D	Total/NA	Water	PrecSep_0	
480-118337-7	D-3S	Total/NA	Water	PrecSep_0	
480-118337-8	D-3D	Total/NA	Water	PrecSep_0	
480-118337-9	D-1S	Total/NA	Water	PrecSep_0	
480-118337-10	D-1D	Total/NA	Water	PrecSep_0	
480-118337-11	D-2S	Total/NA	Water	PrecSep_0	
480-118337-12	D-2D	Total/NA	Water	PrecSep_0	
480-118337-13	D-4S	Total/NA	Water	PrecSep_0	
480-118337-14	D-4D	Total/NA	Water	PrecSep_0	
480-118337-15	D-8	Total/NA	Water	PrecSep_0	
480-118337-16	D-9	Total/NA	Water	PrecSep_0	
480-118337-17	DUP-1	Total/NA	Water	PrecSep_0	
480-118337-18	DUP-2	Total/NA	Water	PrecSep_0	
480-118337-19	FIELD BLANK 1	Total/NA	Water	PrecSep_0	
480-118337-20	EQUIPMENT BLANK	Total/NA	Water	PrecSep_0	
MB 160-311313/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-311313/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-311313/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Client Sample ID: U-4S

Date Collected: 05/15/17 10:00

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:10	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: U-4D

Date Collected: 05/15/17 10:15

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: U-5S

Date Collected: 05/15/17 11:05

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: U-5D

Date Collected: 05/15/17 11:15

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

**Client Sample ID: D-5S2**

**Date Collected: 05/15/17 12:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

**Client Sample ID: D-5D**

**Date Collected: 05/15/17 12:15**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

**Client Sample ID: D-3S**

**Date Collected: 05/15/17 13:00**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

**Client Sample ID: D-3D**

**Date Collected: 05/15/17 13:10**

**Date Received: 05/20/17 09:30**

**Lab Sample ID: 480-118337-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Client Sample ID: D-1S

Date Collected: 05/16/17 08:30

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313170	06/13/17 11:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-1D

Date Collected: 05/16/17 08:40

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:05	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-2S

Date Collected: 05/16/17 09:30

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:05	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-2D

Date Collected: 05/16/17 09:40

Date Received: 05/20/17 09:30

## Lab Sample ID: 480-118337-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Client Sample ID: D-4S

Lab Sample ID: 480-118337-13

Date Collected: 05/16/17 10:25

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314645	06/22/17 08:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-4D

Lab Sample ID: 480-118337-14

Date Collected: 05/16/17 10:35

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-8

Lab Sample ID: 480-118337-15

Date Collected: 05/16/17 11:20

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: D-9

Lab Sample ID: 480-118337-16

Date Collected: 05/16/17 11:50

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Client Sample ID: DUP-1

Lab Sample ID: 480-118337-17

Date Collected: 05/15/17 00:00

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: DUP-2

Lab Sample ID: 480-118337-18

Date Collected: 05/15/17 00:00

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:06	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-118337-19

Date Collected: 05/16/17 12:00

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:07	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-118337-20

Date Collected: 05/16/17 12:05

Matrix: Water

Date Received: 05/20/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			311304	05/31/17 09:28	LDE	TAL SL
Total/NA	Analysis	903.0		1	314643	06/22/17 08:16	ALD	TAL SL
Total/NA	Prep	PrecSep_0			311313	05/31/17 09:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	313169	06/13/17 11:07	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	314773	06/22/17 12:52	RTM	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

## Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

## Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-17 *
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17 *
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-17 *
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-118337-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-118337-1	U-4S	Water	05/15/17 10:00	05/20/17 09:30
480-118337-2	U-4D	Water	05/15/17 10:15	05/20/17 09:30
480-118337-3	U-5S	Water	05/15/17 11:05	05/20/17 09:30
480-118337-4	U-5D	Water	05/15/17 11:15	05/20/17 09:30
480-118337-5	D-5S2	Water	05/15/17 12:00	05/20/17 09:30
480-118337-6	D-5D	Water	05/15/17 12:15	05/20/17 09:30
480-118337-7	D-3S	Water	05/15/17 13:00	05/20/17 09:30
480-118337-8	D-3D	Water	05/15/17 13:10	05/20/17 09:30
480-118337-9	D-1S	Water	05/16/17 08:30	05/20/17 09:30
480-118337-10	D-1D	Water	05/16/17 08:40	05/20/17 09:30
480-118337-11	D-2S	Water	05/16/17 09:30	05/20/17 09:30
480-118337-12	D-2D	Water	05/16/17 09:40	05/20/17 09:30
480-118337-13	D-4S	Water	05/16/17 10:25	05/20/17 09:30
480-118337-14	D-4D	Water	05/16/17 10:35	05/20/17 09:30
480-118337-15	D-8	Water	05/16/17 11:20	05/20/17 09:30
480-118337-16	D-9	Water	05/16/17 11:50	05/20/17 09:30
480-118337-17	DUP-1	Water	05/15/17 00:00	05/20/17 09:30
480-118337-18	DUP-2	Water	05/15/17 00:00	05/20/17 09:30
480-118337-19	FIELD BLANK 1	Water	05/16/17 12:00	05/20/17 09:30
480-118337-20	EQUIPMENT BLANK	Water	05/16/17 12:05	05/20/17 09:30

# Chain of Custody Record



**Client Information (Sub Contract Lab)**  
 Client Contact: **VanDette, Ryan T**  
 Shipping/Receiving: **ryan.vandette@testamericainc.com**  
 Company: **TestAmerica Laboratories, Inc.**  
 Address: **13715 Rider Trail North, Earth City, MO, 63045**  
 Phone: **314-298-8566 (Tel) 314-298-8757 (Fax)**  
 Email:  
 Project Name: **SKB Rosemount**  
 Site: **Rosemount**

Lab PM: **VanDette, Ryan T**  
 E-Mail: **ryan.vandette@testamericainc.com**  
 Accreditations Required (See note): **NELAP - Minnesota**

Due Date Requested: **6/1/2017**  
 TAT Requested (days):  
 PO #:  
 WO #:  
 Project #:  
**48013709**  
 SSO#:  
 Preservation Codes:  
 A - HCL  
 B - NaOH  
 C - Zn Acetate  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Amchlor  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDA  
 Other:  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2O4S  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - pH 4-5  
 Z - other (Specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organic, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Ra/Ra/Fill_Geo_21 Radium-226/228	Analysis Requested	Total Number of containers	Special Instructions/Note:
U-4S (480-118337-1)	5/15/17	10:00 Central	Water	Water	X	X			1	
U-4D (480-118337-2)	5/15/17	10:15 Central	Water	Water	X	X			1	
U-5S (480-118337-3)	5/15/17	11:05 Central	Water	Water	X	X			1	
U-5D (480-118337-4)	5/15/17	11:15 Central	Water	Water	X	X			1	
D-1S (480-118337-9)	5/16/17	08:30 Central	Water	Water	X	X			1	
D-1D (480-118337-10)	5/16/17	08:40 Central	Water	Water	X	X			1	
D-2S (480-118337-11)	5/16/17	09:30 Central	Water	Water	X	X			1	
D-2D (480-118337-12)	5/16/17	09:40 Central	Water	Water	X	X			1	
D-4S (480-118337-13)	5/16/17	10:25 Central	Water	Water	X	X			1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: **I, II, III, IV, Other (specify)**  
 Primary Deliverable Rank: **2**  
 Date:

Empty Kit Relinquished by:  
 Relinquished by: *Waltke*  
 Relinquished by:  
 Relinquished by:  
 Date/Time: **5/22/17 1300**  
 Date/Time:  
 Date/Time:  
 Company: **TAB**  
 Company:  
 Company:  
 Received by: *Jan Clark*  
 Received by:  
 Received by:  
 Date/Time: **5-23-17 0745**  
 Date/Time:  
 Date/Time:  
 Company: **TA SR**  
 Company:  
 Company:



## Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T		COC No: 480-35105.2	
Client Contact: TestAmerica Laboratories, Inc.		E-Mail: ryan.vandette@testamericainc.com		Page: Page 2 of 2	
Address: 13715 Rider Trail North, Earth City, MO, 63045		State of Origin: Minnesota		Job #: 480-118337-1	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Accreditations Required (See note): NELAP - Minnesota		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (Specify)	
Project Name: SKB Rosemount		Project #: 48013709		Analysis Requested	
Site: Rosemount		SSOW#:		Total Number of Containers	
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>		<b>Field Filtered Sample (Yes or No)</b>	
D-4D (480-118337-14)		5/16/17		X	
D-8 (480-118337-15)		5/16/17		X	
D-9 (480-118337-16)		5/16/17		X	
DUP-1 (480-118337-17)		5/15/17		X	
FIELD BLANK 1 (480-118337-19)		5/16/17		X	
EQUIPMENT BLANK (480-118337-20)		5/16/17		X	
Special Instructions/Note:		901.1 Ra/Fill_Geo_21 Radium_226/228		Perform MS/MSD (Yes or No)	
Sample Type (C=Comp, G=grab)		Sample Time		Matrix	
Water		10:35 Central		Water	
Water		11:20 Central		Water	
Water		11:50 Central		Water	
Water		12:00 Central		Water	
Water		12:05 Central		Water	
Preservation Code:		Special Instructions/Note:		Special Instructions/Note:	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:	
Primary Deliverable Rank: 2		Date: 5/22/17 1300		Date/Time: 5-23-17 0745	
Empty Kit Relinquished by:		Date/Time: 5/22/17 1300		Date/Time: 5-23-17 0745	
Relinquished by: <i>[Signature]</i>		Company: <i>[Signature]</i>		Company: TA STL	
Relinquished by:		Company:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody.





**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Lab P.M. VanDette, Ryan T	Carrier Tracking No(s): 480-35107-1	
Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	Page: Page 1 of 1	
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota	Job #: 480-118337-1	
Address: 13715 Rider Trail North,		Due Date Requested: 6/1/2017	<b>Analysis Requested</b> M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:	
City: Earth City		TAT Requested (days):		
State, Zip: MO, 63045		PO #:		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		
Project Name: SKB Rosemount		Project #: 48013709		
Site: Rosemount		SSOW#:		
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Field Filtered Sample (Yes or No)</b>		<b>Total Number of Containers</b>
D-5S2 (480-118337-5)	Sample Date: 5/15/17	Sample Time: 12:00 Central		1
D-5D (480-118337-6)	Sample Date: 5/15/17	Sample Time: 12:15 Central		1
D-3S (480-118337-7)	Sample Date: 5/15/17	Sample Time: 13:00 Central		1
D-3D (480-118337-8)	Sample Date: 5/15/17	Sample Time: 13:10 Central	1	
DUP-2 (480-118337-18)	Sample Date: 5/15/17	Sample Time: Central	1	
Matrix (W=water, S=solid, O=wastewater, BT=BIOSURV, AS=Air)		Preservation Code:	Special Instructions/Note:	
D-5S2 (480-118337-5): Water				
D-5D (480-118337-6): Water				
D-3S (480-118337-7): Water				
D-3D (480-118337-8): Water				
DUP-2 (480-118337-18): Water				
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>				
<b>Possible Hazard Identification</b>				
Unconfirmed				
Deliverable Requested: I, II, III, IV, Other (specify) _____				
Empty Kit Relinquished by: _____		Date: _____	Time: _____	
Relinquished by: _____		Date/Time: 5/22/17 13:00	Company: TAB	
Relinquished by: _____		Date/Time: _____	Company: _____	
Relinquished by: _____		Date/Time: _____	Company: _____	
Custody Seals Intact: _____		Custody Seal No.: _____	Company: _____	
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	Company: _____	
<p><b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>  <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p>				
Special Instructions/QC Requirements:				
Method of Shipment:				
Received by: _____				
Date/Time: 5-23-17 0745				
Company: THSA				



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-118337-2

**Login Number: 118337**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-118337-2

**Login Number: 118337**

**List Number: 2**

**Creator: Clarke, Jill C**

**List Source: TestAmerica St. Louis**

**List Creation: 05/23/17 12:03 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	20.0, 20.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-120277-1

TestAmerica Sample Delivery Group: 120277

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

7/17/2017 1:32:00 PM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

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results through

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Qualifiers

### Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Job ID: 480-120277-1

### Laboratory: TestAmerica Buffalo

#### Narrative

#### Job Narrative 480-120277-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 6/28/2017 9:45 AM, 6/29/2017 9:00 AM and 6/30/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 7 coolers at receipt time were 2.0° C, 2.7° C, 3.0° C, 3.0° C, 3.0° C, 3.2° C and 3.6° C.

#### HPLC/IC

Method(s) 300.0: The following samples was diluted to bring the concentration of target analytes within the calibration range: U-5S (480-120277-3) and DUP-1 (480-120277-5). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: U-4S (480-120277-1), U-4D (480-120277-2), U-5D (480-120277-4), D-1D (480-120371-1) and DUPLICATE-2 (480-120371-7). The sample was analyzed at a dilution based on screening results.

Method(s) 300.0: The following samples was diluted due to the nature of the sample matrix based on historical results: D-1S (480-120371-2), D-3D (480-120371-3), D-3S (480-120371-4), D-5D (480-120371-5) and D-5S2 (480-120371-6). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: D-2S (480-120451-1), D-2D (480-120451-2), D-4S (480-120451-3), D-4D (480-120451-4), D-8 (480-120451-5) and D-9 (480-120451-6). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Total Chromium result reported for the following sample did not concur with results previously reported for this site: D-2S (480-120451-1). Reanalysis was performed, and the result confirmed.

Method(s) 6010C: The Total Barium and Calcium results reported for the following sample do not concur with results previously reported for this site: U-5S (480-120277-3). Reanalysis was performed, and the results confirmed.

Method(s) 6010C: The Total Chromium result reported for the following sample did not concur with results previously reported for this site: U-4S (480-120277-1). Reanalysis was performed, and the result confirmed.

Method(s) 6020A: The total Arsenic, and Cobalt results reported for the following sample do not concur with results previously reported for this site: U-5S (480-120277-3). Reanalysis was performed, and the result(s) confirmed.

Method(s) 6020A: The total Selenium results reported for the following sample do not concur with results previously reported for this site: U-5S (480-120277-3). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: U-4S (480-120277-1), U-4D (480-120277-2), U-5S (480-120277-3), U-5D (480-120277-4), DUP-1 (480-120277-5) and FIELD BLANK 1 (480-120277-6).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

---

## Job ID: 480-120277-1 (Continued)

---

### Laboratory: TestAmerica Buffalo (Continued)

timeframe: D-1D (480-120371-1), D-1S (480-120371-2), D-3D (480-120371-3), D-3S (480-120371-4), D-5D (480-120371-5), D-5S2 (480-120371-6), DUPLICATE-2 (480-120371-7) and FIELD BLANK 2 (480-120371-8).

Method(s) SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-2S (480-120451-1), D-2D (480-120451-2), D-4S (480-120451-3) and D-4D (480-120451-4).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-8 (480-120451-5), D-9 (480-120451-6) and EQUIPMENT BLANK (480-120451-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Client Sample ID: U-4S

## Lab Sample ID: 480-120277-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.043		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	103		0.50		mg/L	1		6010C	Total/NA
Chromium	0.049		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.34		0.30		ug/L	1		6020A	Total/NA
Chloride	49.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	447		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-120277-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	93.7		0.50		mg/L	1		6010C	Total/NA
Chloride	40.0		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	416		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-120277-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.085		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	128		0.50		mg/L	1		6010C	Total/NA
Arsenic	1.4		1.0		ug/L	1		6020A	Total/NA
Cobalt	0.30		0.30		ug/L	1		6020A	Total/NA
Selenium	2.1		1.0		ug/L	1		6020A	Total/NA
Chloride	148		2.5		mg/L	5		300.0	Total/NA
Sulfate	27.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	695		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-120277-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.055		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.8		0.50		mg/L	1		6010C	Total/NA
Chloride	29.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	396		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Client Sample ID: U-5D (Continued)

## Lab Sample ID: 480-120277-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 480-120277-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.085		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	129		0.50		mg/L	1		6010C	Total/NA
Arsenic	1.3		1.0		ug/L	1		6020A	Total/NA
Selenium	2.1		1.0		ug/L	1		6020A	Total/NA
Chloride	149		2.5		mg/L	5		300.0	Total/NA
Sulfate	27.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	688		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

## Lab Sample ID: 480-120277-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-120371-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Calcium	93.5		0.50		mg/L	1		6010C	Total/NA
Chloride	41.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	407		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-120371-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.040		0.020		mg/L	1		6010C	Total/NA
Calcium	107		0.50		mg/L	1		6010C	Total/NA
Chloride	34.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	434		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Client Sample ID: D-3D

## Lab Sample ID: 480-120371-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.052		0.0020		mg/L	1		6010C	Total/NA
Boron	0.025		0.020		mg/L	1		6010C	Total/NA
Calcium	100		0.50		mg/L	1		6010C	Total/NA
Chloride	33.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	33.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	405		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-120371-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Boron	0.069		0.020		mg/L	1		6010C	Total/NA
Calcium	106		0.50		mg/L	1		6010C	Total/NA
Selenium	1.5		1.0		ug/L	1		6020A	Total/NA
Chloride	63.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	45.9		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	456		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-120371-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Calcium	99.8		0.50		mg/L	1		6010C	Total/NA
Chloride	24.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	34.3		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	408		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-120371-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.071		0.0020		mg/L	1		6010C	Total/NA
Boron	0.054		0.020		mg/L	1		6010C	Total/NA
Calcium	121		0.50		mg/L	1		6010C	Total/NA
Selenium	1.1		1.0		ug/L	1		6020A	Total/NA
Chloride	49.9		2.5		mg/L	5		300.0	Total/NA
Sulfate	49.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	500		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Client Sample ID: DUPLICATE-2

## Lab Sample ID: 480-120371-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Boron	0.024		0.020		mg/L	1		6010C	Total/NA
Calcium	99.5		0.50		mg/L	1		6010C	Total/NA
Chloride	33.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	33.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	449		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 2

## Lab Sample ID: 480-120371-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-120451-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.047		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0065		0.0040		mg/L	1		6010C	Total/NA
Selenium	1.4		1.0		ug/L	1		6020A	Total/NA
Chloride	47.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	30.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	454		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	20.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-120451-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.0		0.50		mg/L	1		6010C	Total/NA
Chloride	33.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	27.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	409		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-120451-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.067		0.0020		mg/L	1		6010C	Total/NA
Calcium	97.8		0.50		mg/L	1		6010C	Total/NA
Chloride	47.7		2.5		mg/L	5		300.0	Total/NA
Sulfate	31.0		10.0		mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Client Sample ID: D-4S (Continued)

## Lab Sample ID: 480-120451-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	458		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-120451-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.058		0.0020		mg/L	1		6010C	Total/NA
Calcium	93.7		0.50		mg/L	1		6010C	Total/NA
Chloride	46.0		2.5		mg/L	5		300.0	Total/NA
Sulfate	30.5		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	449		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-120451-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Calcium	84.1		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.37		0.30		ug/L	1		6020A	Total/NA
Chloride	20.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	48.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	420		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-120451-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.062		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	100		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.51		0.30		ug/L	1		6020A	Total/NA
Chloride	44.5		2.5		mg/L	5		300.0	Total/NA
Sulfate	27.8		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	442		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-120451-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	5.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: U-4S**  
**Date Collected: 06/26/17 11:40**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.043		0.0020		mg/L		06/30/17 09:30	07/03/17 10:29	1
Boron	0.021		0.020		mg/L		06/30/17 09:30	07/03/17 10:29	1
Calcium	103		0.50		mg/L		06/30/17 09:30	07/03/17 10:29	1
Chromium	0.049		0.0040		mg/L		06/30/17 09:30	07/03/17 10:29	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 10:29	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 10:29	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:10	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:10	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 06:10	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 06:10	1
Cobalt	0.34		0.30		ug/L		07/06/17 10:57	07/07/17 06:10	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:10	1
Selenium	ND		1.0		ug/L		07/06/17 10:57	07/10/17 18:47	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 06:10	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 14:52	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49.3		2.5		mg/L			07/11/17 21:18	5
Fluoride	ND		0.25		mg/L			07/11/17 21:18	5
Sulfate	29.3		10.0		mg/L			07/11/17 21:18	5
Total Dissolved Solids	447		10.0		mg/L			06/30/17 02:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			06/29/17 16:10	1
Temperature	25.6	HF	0.001		Degrees C			06/29/17 16:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: U-4D**  
**Date Collected: 06/26/17 11:50**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		06/30/17 09:30	07/03/17 10:32	1
Boron	ND		0.020		mg/L		06/30/17 09:30	07/03/17 10:32	1
<b>Calcium</b>	<b>93.7</b>		0.50		mg/L		06/30/17 09:30	07/03/17 10:32	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 10:32	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 10:32	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 10:32	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:16	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:16	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 06:16	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 06:16	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 06:16	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:16	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 06:16	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 06:16	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 14:54	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>40.0</b>		2.5		mg/L			07/11/17 21:26	5
Fluoride	ND		0.25		mg/L			07/11/17 21:26	5
<b>Sulfate</b>	<b>29.8</b>		10.0		mg/L			07/11/17 21:26	5
<b>Total Dissolved Solids</b>	<b>416</b>		10.0		mg/L			06/30/17 02:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			06/29/17 16:13	1
<b>Temperature</b>	<b>25.7</b>	<b>HF</b>	0.001		Degrees C			06/29/17 16:13	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: U-5S**  
**Date Collected: 06/26/17 13:45**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.085		0.0020		mg/L		06/30/17 09:30	07/03/17 10:49	1
Boron	0.021		0.020		mg/L		06/30/17 09:30	07/03/17 10:49	1
Calcium	128		0.50		mg/L		06/30/17 09:30	07/03/17 10:49	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 10:49	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 10:49	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 10:49	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:21	1
Arsenic	1.4		1.0		ug/L		07/06/17 10:57	07/07/17 06:21	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 06:21	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 06:21	1
Cobalt	0.30		0.30		ug/L		07/06/17 10:57	07/07/17 06:21	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 06:21	1
Selenium	2.1		1.0		ug/L		07/06/17 10:57	07/10/17 18:52	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 06:21	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 14:56	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	148		2.5		mg/L			07/11/17 21:34	5
Fluoride	ND		0.25		mg/L			07/11/17 21:34	5
Sulfate	27.3		10.0		mg/L			07/11/17 21:34	5
Total Dissolved Solids	695		10.0		mg/L			06/30/17 02:13	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			06/29/17 16:24	1
Temperature	26.0	HF	0.001		Degrees C			06/29/17 16:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: U-5D**  
**Date Collected: 06/26/17 13:55**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.055</b>		0.0020		mg/L		06/30/17 09:30	07/03/17 10:53	1
Boron	ND		0.020		mg/L		06/30/17 09:30	07/03/17 10:53	1
<b>Calcium</b>	<b>89.8</b>		0.50		mg/L		06/30/17 09:30	07/03/17 10:53	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 10:53	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 10:53	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 10:53	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:06	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:06	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:06	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:06	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:06	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:06	1
Selenium	ND		1.0		ug/L		07/13/17 08:00	07/13/17 23:23	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:06	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 14:58	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>29.7</b>		2.5		mg/L			07/11/17 22:23	5
Fluoride	ND		0.25		mg/L			07/11/17 22:23	5
<b>Sulfate</b>	<b>31.3</b>		10.0		mg/L			07/11/17 22:23	5
<b>Total Dissolved Solids</b>	<b>396</b>		10.0		mg/L			06/30/17 02:13	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			06/29/17 16:16	1
<b>Temperature</b>	<b>25.7</b>	<b>HF</b>	0.001		Degrees C			06/29/17 16:16	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

**Client Sample ID: DUP-1**  
**Date Collected: 06/26/17 00:00**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.085		0.0020		mg/L		06/30/17 09:30	07/03/17 10:56	1
Boron	0.021		0.020		mg/L		06/30/17 09:30	07/03/17 10:56	1
Calcium	129		0.50		mg/L		06/30/17 09:30	07/03/17 10:56	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 10:56	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 10:56	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 10:56	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:12	1
Arsenic	1.3		1.0		ug/L		07/06/17 10:57	07/07/17 07:12	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:12	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:12	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:12	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:12	1
Selenium	2.1		1.0		ug/L		07/06/17 10:57	07/10/17 19:25	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:12	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 15:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	149		2.5		mg/L			07/11/17 22:31	5
Fluoride	ND		0.25		mg/L			07/11/17 22:31	5
Sulfate	27.8		10.0		mg/L			07/11/17 22:31	5
Total Dissolved Solids	688		10.0		mg/L			06/30/17 02:13	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			06/29/17 16:19	1
Temperature	25.8	HF	0.001		Degrees C			06/29/17 16:19	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-120277-6**

**Date Collected: 06/26/17 15:20**

**Matrix: Water**

**Date Received: 06/28/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		06/30/17 09:30	07/03/17 11:10	1
Boron	ND		0.020		mg/L		06/30/17 09:30	07/03/17 11:10	1
Calcium	ND		0.50		mg/L		06/30/17 09:30	07/03/17 11:10	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 11:10	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 11:10	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 11:10	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:17	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:17	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:17	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:17	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:17	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:17	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 07:17	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 15:02	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/11/17 22:39	1
Fluoride	ND		0.050		mg/L			07/11/17 22:39	1
Sulfate	ND		2.0		mg/L			07/11/17 22:39	1
Total Dissolved Solids	ND		10.0		mg/L			06/30/17 02:13	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			06/29/17 16:22	1
Temperature	25.8	HF	0.001		Degrees C			06/29/17 16:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-1D**  
**Date Collected: 06/27/17 14:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.049</b>		0.0020		mg/L		07/06/17 08:40	07/08/17 10:34	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/13/17 10:49	1
<b>Calcium</b>	<b>93.5</b>		0.50		mg/L		07/06/17 08:40	07/08/17 10:34	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:34	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:34	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:34	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:40	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:40	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 19:40	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 19:40	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 19:40	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:40	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:40	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 19:40	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:27	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>41.4</b>		2.5		mg/L			07/11/17 23:04	5
Fluoride	ND		0.25		mg/L			07/11/17 23:04	5
<b>Sulfate</b>	<b>31.2</b>		10.0		mg/L			07/11/17 23:04	5
<b>Total Dissolved Solids</b>	<b>407</b>		10.0		mg/L			06/30/17 17:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			06/30/17 15:07	1
<b>Temperature</b>	<b>21.1</b>	<b>HF</b>	0.001		Degrees C			06/30/17 15:07	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-1S**  
**Date Collected: 06/27/17 13:25**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		07/06/17 08:40	07/08/17 10:47	1
Boron	0.040		0.020		mg/L		07/06/17 08:40	07/08/17 10:47	1
Calcium	107		0.50		mg/L		07/06/17 08:40	07/08/17 10:47	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:47	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:47	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:47	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:46	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:46	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 19:46	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 19:46	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 19:46	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:46	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:46	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 19:46	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:29	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.1		2.5		mg/L			07/11/17 23:44	5
Fluoride	ND		0.25		mg/L			07/11/17 23:44	5
Sulfate	28.5		10.0		mg/L			07/11/17 23:44	5
Total Dissolved Solids	434		10.0		mg/L			06/30/17 17:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1		SU			06/30/17 15:10	1
Temperature	21.1	HF	0.001		Degrees C			06/30/17 15:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-3D**  
**Date Collected: 06/27/17 10:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.052		0.0020		mg/L		07/06/17 08:40	07/08/17 10:51	1
Boron	0.025		0.020		mg/L		07/06/17 08:40	07/08/17 10:51	1
Calcium	100		0.50		mg/L		07/06/17 08:40	07/08/17 10:51	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:51	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:51	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:51	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:51	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:51	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 19:51	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 19:51	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 19:51	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:51	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:51	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 19:51	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:36	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.4		2.5		mg/L			07/11/17 23:52	5
Fluoride	ND		0.25		mg/L			07/11/17 23:52	5
Sulfate	33.4		10.0		mg/L			07/11/17 23:52	5
Total Dissolved Solids	405		10.0		mg/L			06/30/17 17:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			06/30/17 15:12	1
Temperature	21.1	HF	0.001		Degrees C			06/30/17 15:12	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-3S**  
**Date Collected: 06/27/17 10:10**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.049		0.0020		mg/L		07/06/17 08:40	07/08/17 10:54	1
Boron	0.069		0.020		mg/L		07/06/17 08:40	07/08/17 10:54	1
Calcium	106		0.50		mg/L		07/06/17 08:40	07/08/17 10:54	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:54	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:54	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:54	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:57	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:57	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 19:57	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 19:57	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 19:57	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:57	1
Selenium	1.5		1.0		ug/L		07/06/17 08:20	07/06/17 19:57	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 19:57	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:41	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63.8		2.5		mg/L			07/12/17 00:01	5
Fluoride	ND		0.25		mg/L			07/12/17 00:01	5
Sulfate	45.9		10.0		mg/L			07/12/17 00:01	5
Total Dissolved Solids	456		10.0		mg/L			06/30/17 17:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			06/30/17 15:15	1
Temperature	21.3	HF	0.001		Degrees C			06/30/17 15:15	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

**Client Sample ID: D-5D**  
**Date Collected: 06/27/17 08:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.051</b>		0.0020		mg/L		07/06/17 08:40	07/08/17 10:58	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/08/17 10:58	1
<b>Calcium</b>	<b>99.8</b>		0.50		mg/L		07/06/17 08:40	07/08/17 10:58	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:58	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:58	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:58	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:02	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:02	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 20:02	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 20:02	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 20:02	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:02	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:02	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 20:02	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:42	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>24.1</b>		2.5		mg/L			07/12/17 00:09	5
Fluoride	ND		0.25		mg/L			07/12/17 00:09	5
<b>Sulfate</b>	<b>34.3</b>		10.0		mg/L			07/12/17 00:09	5
<b>Total Dissolved Solids</b>	<b>408</b>		10.0		mg/L			07/05/17 13:43	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			06/30/17 15:17	1
<b>Temperature</b>	<b>21.3</b>	<b>HF</b>	0.001		Degrees C			06/30/17 15:17	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-5S2**  
**Date Collected: 06/27/17 07:40**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.071		0.0020		mg/L		07/06/17 08:40	07/08/17 11:01	1
Boron	0.054		0.020		mg/L		07/06/17 08:40	07/08/17 11:01	1
Calcium	121		0.50		mg/L		07/06/17 08:40	07/08/17 11:01	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 11:01	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 11:01	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 11:01	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:25	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:25	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 20:25	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 20:25	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 20:25	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:25	1
Selenium	1.1		1.0		ug/L		07/06/17 08:20	07/06/17 20:25	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 20:25	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49.9		2.5		mg/L			07/12/17 00:17	5
Fluoride	ND		0.25		mg/L			07/12/17 00:17	5
Sulfate	49.2		10.0		mg/L			07/12/17 00:17	5
Total Dissolved Solids	500		10.0		mg/L			07/05/17 13:43	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			06/30/17 15:20	1
Temperature	21.2	HF	0.001		Degrees C			06/30/17 15:20	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: DUPLICATE-2**

**Lab Sample ID: 480-120371-7**

**Date Collected: 06/27/17 00:00**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.051		0.0020		mg/L		07/06/17 08:40	07/08/17 11:04	1
Boron	0.024		0.020		mg/L		07/06/17 08:40	07/08/17 11:04	1
Calcium	99.5		0.50		mg/L		07/06/17 08:40	07/08/17 11:04	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 11:04	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 11:04	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 11:04	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:31	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:31	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 20:31	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 20:31	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 20:31	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:31	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:31	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 20:31	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.7		1.0		mg/L			07/12/17 00:25	2
Fluoride	ND		0.10		mg/L			07/12/17 00:25	2
Sulfate	33.4		4.0		mg/L			07/12/17 00:25	2
Total Dissolved Solids	449		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			06/30/17 15:23	1
Temperature	21.2	HF	0.001		Degrees C			06/30/17 15:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-120371-8**

**Date Collected: 06/27/17 12:15**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		07/06/17 08:40	07/08/17 11:08	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/08/17 11:08	1
Calcium	ND		0.50		mg/L		07/06/17 08:40	07/08/17 11:08	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 11:08	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 11:08	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 11:08	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:36	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:36	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 20:36	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 20:36	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 20:36	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:36	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 20:36	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 20:36	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:48	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/12/17 00:33	1
Fluoride	ND		0.050		mg/L			07/12/17 00:33	1
Sulfate	ND		2.0		mg/L			07/12/17 00:33	1
Total Dissolved Solids	ND		10.0		mg/L			07/05/17 17:42	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.3	HF	0.1		SU			06/30/17 15:28	1
Temperature	21.1	HF	0.001		Degrees C			06/30/17 15:28	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-2S**  
**Date Collected: 06/28/17 09:05**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.047		0.0020		mg/L		07/06/17 08:40	07/06/17 19:11	1
Boron	0.021		0.020		mg/L		07/06/17 08:40	07/06/17 19:11	1
Calcium	101		0.50		mg/L		07/06/17 08:40	07/06/17 19:11	1
Chromium	0.0065		0.0040		mg/L		07/06/17 08:40	07/06/17 19:11	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:11	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:11	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:28	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:28	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:28	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:28	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:28	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:28	1
Selenium	1.4		1.0		ug/L		07/06/17 10:57	07/10/17 19:48	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:28	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:15	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47.7		2.5		mg/L			07/13/17 19:39	5
Fluoride	ND		0.25		mg/L			07/13/17 19:39	5
Sulfate	30.7		10.0		mg/L			07/13/17 19:39	5
Total Dissolved Solids	454		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			07/02/17 13:19	1
Temperature	20.9	HF	0.001		Degrees C			07/02/17 13:19	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-2D**  
**Date Collected: 06/28/17 09:25**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		07/06/17 08:40	07/06/17 19:38	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 19:38	1
<b>Calcium</b>	<b>91.0</b>		0.50		mg/L		07/06/17 08:40	07/06/17 19:38	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 19:38	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:38	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:38	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:34	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:34	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:34	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:34	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:34	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:34	1
Selenium	ND		1.0		ug/L		07/06/17 10:57	07/10/17 19:54	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:34	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:17	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>33.6</b>		2.5		mg/L			07/13/17 19:47	5
Fluoride	ND		0.25		mg/L			07/13/17 19:47	5
<b>Sulfate</b>	<b>27.4</b>		10.0		mg/L			07/13/17 19:47	5
<b>Total Dissolved Solids</b>	<b>409</b>		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			07/02/17 13:22	1
<b>Temperature</b>	<b>21.0</b>	<b>HF</b>	0.001		Degrees C			07/02/17 13:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-4S**  
**Date Collected: 06/28/17 11:10**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.067</b>		0.0020		mg/L		07/06/17 08:40	07/06/17 19:41	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 19:41	1
<b>Calcium</b>	<b>97.8</b>		0.50		mg/L		07/06/17 08:40	07/06/17 19:41	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 19:41	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:41	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:41	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:39	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:39	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:39	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:39	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:39	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:39	1
Selenium	ND		1.0		ug/L		07/06/17 10:57	07/10/17 19:59	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:19	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>47.7</b>		2.5		mg/L			07/13/17 19:55	5
Fluoride	ND		0.25		mg/L			07/13/17 19:55	5
<b>Sulfate</b>	<b>31.0</b>		10.0		mg/L			07/13/17 19:55	5
<b>Total Dissolved Solids</b>	<b>458</b>		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.5</b>	<b>HF</b>	0.1		SU			07/02/17 13:24	1
<b>Temperature</b>	<b>21.2</b>	<b>HF</b>	0.001		Degrees C			07/02/17 13:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-4D**  
**Date Collected: 06/28/17 11:35**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.058</b>		0.0020		mg/L		07/06/17 08:40	07/06/17 19:44	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 19:44	1
<b>Calcium</b>	<b>93.7</b>		0.50		mg/L		07/06/17 08:40	07/06/17 19:44	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 19:44	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:44	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:44	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:45	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:45	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:45	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:45	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 07:45	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:45	1
Selenium	ND		1.0		ug/L		07/06/17 10:57	07/07/17 17:34	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:45	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:21	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>46.0</b>		2.5		mg/L			07/13/17 20:03	5
Fluoride	ND		0.25		mg/L			07/13/17 20:03	5
<b>Sulfate</b>	<b>30.5</b>		10.0		mg/L			07/13/17 20:03	5
<b>Total Dissolved Solids</b>	<b>449</b>		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			07/02/17 13:27	1
<b>Temperature</b>	<b>21.5</b>	<b>HF</b>	0.001		Degrees C			07/02/17 13:27	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-8**  
**Date Collected: 06/28/17 12:40**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.053</b>		0.0020		mg/L		07/06/17 08:40	07/06/17 19:48	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 19:48	1
<b>Calcium</b>	<b>84.1</b>		0.50		mg/L		07/06/17 08:40	07/06/17 19:48	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 19:48	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:48	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:48	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:50	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:50	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 07:50	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 07:50	1
<b>Cobalt</b>	<b>0.37</b>		0.30		ug/L		07/06/17 10:57	07/07/17 07:50	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 07:50	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 07:50	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 07:50	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:23	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>20.5</b>		2.5		mg/L			07/13/17 20:11	5
Fluoride	ND		0.25		mg/L			07/13/17 20:11	5
<b>Sulfate</b>	<b>48.2</b>		10.0		mg/L			07/13/17 20:11	5
<b>Total Dissolved Solids</b>	<b>420</b>		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			07/02/17 13:18	1
<b>Temperature</b>	<b>25.3</b>	<b>HF</b>	0.001		Degrees C			07/02/17 13:18	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-9**  
**Date Collected: 06/28/17 13:45**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.062		0.0020		mg/L		07/06/17 08:40	07/06/17 19:51	1
Boron	0.021		0.020		mg/L		07/06/17 08:40	07/06/17 19:51	1
Calcium	100		0.50		mg/L		07/06/17 08:40	07/06/17 19:51	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 19:51	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 19:51	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 19:51	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:13	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:13	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 08:13	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 08:13	1
Cobalt	0.51		0.30		ug/L		07/06/17 10:57	07/07/17 08:13	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:13	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 08:13	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 08:13	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:25	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.5		2.5		mg/L			07/13/17 20:52	5
Fluoride	ND		0.25		mg/L			07/13/17 20:52	5
Sulfate	27.8		10.0		mg/L			07/13/17 20:52	5
Total Dissolved Solids	442		10.0		mg/L			07/05/17 17:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			07/02/17 13:21	1
Temperature	25.4	HF	0.001		Degrees C			07/02/17 13:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-120451-7**

**Date Collected: 06/28/17 16:00**

**Matrix: Water**

**Date Received: 06/30/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		07/06/17 08:40	07/06/17 20:05	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 20:05	1
Calcium	ND		0.50		mg/L		07/06/17 08:40	07/06/17 20:05	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 20:05	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 20:05	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 20:05	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:19	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:19	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 08:19	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 08:19	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 08:19	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 08:19	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 08:19	1
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 08:19	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 13:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/13/17 21:00	1
Fluoride	ND		0.050		mg/L			07/13/17 21:00	1
Sulfate	ND		2.0		mg/L			07/13/17 21:00	1
Total Dissolved Solids	ND		10.0		mg/L			07/05/17 17:42	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.7	HF	0.1		SU			07/02/17 13:24	1
Temperature	25.5	HF	0.001		Degrees C			07/02/17 13:24	1

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-364812/1-A**  
**Matrix: Water**  
**Analysis Batch: 365471**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 364812**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		06/30/17 09:30	07/03/17 09:51	1
Boron	ND		0.020		mg/L		06/30/17 09:30	07/03/17 09:51	1
Calcium	ND		0.50		mg/L		06/30/17 09:30	07/03/17 09:51	1
Chromium	ND		0.0040		mg/L		06/30/17 09:30	07/03/17 09:51	1
Lead	ND		0.010		mg/L		06/30/17 09:30	07/03/17 09:51	1
Lithium	ND		0.030		mg/L		06/30/17 09:30	07/03/17 09:51	1

**Lab Sample ID: LCS 480-364812/2-A**  
**Matrix: Water**  
**Analysis Batch: 365471**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364812**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.206		mg/L		103	80 - 120
Boron	0.200	0.210		mg/L		105	80 - 120
Calcium	10.0	10.30		mg/L		103	80 - 120
Chromium	0.200	0.206		mg/L		103	80 - 120
Lead	0.200	0.208		mg/L		104	80 - 120

**Lab Sample ID: 480-120277-2 MS**  
**Matrix: Water**  
**Analysis Batch: 365471**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 364812**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.042		0.200	0.244		mg/L		101	75 - 125
Boron	ND		0.200	0.220		mg/L		102	75 - 125
Calcium	93.7		10.0	100.8	4	mg/L		71	75 - 125
Chromium	ND		0.200	0.206		mg/L		103	75 - 125
Lead	ND		0.200	0.212		mg/L		106	75 - 125

**Lab Sample ID: 480-120277-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 365471**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 364812**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.042		0.200	0.243		mg/L		100	75 - 125	0	20
Boron	ND		0.200	0.217		mg/L		101	75 - 125	1	20
Calcium	93.7		10.0	101.6	4	mg/L		79	75 - 125	1	20
Chromium	ND		0.200	0.203		mg/L		101	75 - 125	2	20
Lead	ND		0.200	0.213		mg/L		107	75 - 125	0	20

**Lab Sample ID: MB 480-365434/1-A**  
**Matrix: Water**  
**Analysis Batch: 366110**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365434**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		07/06/17 08:40	07/08/17 10:27	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/08/17 10:27	1
Calcium	ND		0.50		mg/L		07/06/17 08:40	07/08/17 10:27	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/08/17 10:27	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-365434/1-A**  
**Matrix: Water**  
**Analysis Batch: 366110**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365434**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.010		mg/L		07/06/17 08:40	07/08/17 10:27	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/08/17 10:27	1

**Lab Sample ID: LCS 480-365434/2-A**  
**Matrix: Water**  
**Analysis Batch: 366110**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365434**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.207		mg/L		104	80 - 120
Boron	0.200	0.207		mg/L		103	80 - 120
Calcium	10.0	10.11		mg/L		101	80 - 120
Chromium	0.200	0.205		mg/L		103	80 - 120
Lead	0.200	0.208		mg/L		104	80 - 120

**Lab Sample ID: MB 480-365435/1-A**  
**Matrix: Water**  
**Analysis Batch: 365893**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365435**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		07/06/17 08:40	07/06/17 18:54	1
Boron	ND		0.020		mg/L		07/06/17 08:40	07/06/17 18:54	1
Calcium	ND		0.50		mg/L		07/06/17 08:40	07/06/17 18:54	1
Chromium	ND		0.0040		mg/L		07/06/17 08:40	07/06/17 18:54	1
Lead	ND		0.010		mg/L		07/06/17 08:40	07/06/17 18:54	1
Lithium	ND		0.030		mg/L		07/06/17 08:40	07/06/17 18:54	1

**Lab Sample ID: LCS 480-365435/2-A**  
**Matrix: Water**  
**Analysis Batch: 365893**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365435**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.205		mg/L		103	80 - 120
Boron	0.200	0.201		mg/L		101	80 - 120
Calcium	10.0	9.99		mg/L		100	80 - 120
Chromium	0.200	0.208		mg/L		104	80 - 120
Lead	0.200	0.204		mg/L		102	80 - 120

**Lab Sample ID: 480-120451-1 MS**  
**Matrix: Water**  
**Analysis Batch: 365893**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**  
**Prep Batch: 365435**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.047		0.200	0.250		mg/L		102	75 - 125
Boron	0.021		0.200	0.224		mg/L		101	75 - 125
Calcium	101		10.0	110.1	4	mg/L		92	75 - 125
Chromium	0.0065		0.200	0.214		mg/L		104	75 - 125
Lead	ND		0.200	0.209		mg/L		105	75 - 125

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 480-120451-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 365893**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**  
**Prep Batch: 365435**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Barium	0.047		0.200	0.248		mg/L		100	75 - 125	1	20	
Boron	0.021		0.200	0.222		mg/L		100	75 - 125	1	20	
Calcium	101		10.0	108.8	4	mg/L		79	75 - 125	1	20	
Chromium	0.0065		0.200	0.212		mg/L		103	75 - 125	1	20	
Lead	ND		0.200	0.208		mg/L		104	75 - 125	0	20	

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-365439/1-A**  
**Matrix: Water**  
**Analysis Batch: 365900**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365439**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:29	1
Arsenic	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:29	1
Beryllium	ND		0.70		ug/L		07/06/17 08:20	07/06/17 19:29	1
Cadmium	ND		0.50		ug/L		07/06/17 08:20	07/06/17 19:29	1
Cobalt	ND		0.30		ug/L		07/06/17 08:20	07/06/17 19:29	1
Molybdenum	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:29	1
Selenium	ND		1.0		ug/L		07/06/17 08:20	07/06/17 19:29	1
Thallium	ND		0.20		ug/L		07/06/17 08:20	07/06/17 19:29	1

**Lab Sample ID: LCS 480-365439/2-A**  
**Matrix: Water**  
**Analysis Batch: 365900**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365439**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Antimony	20.0	19.26		ug/L		96	80 - 120	
Arsenic	20.0	19.06		ug/L		95	80 - 120	
Beryllium	20.0	19.71		ug/L		99	80 - 120	
Cadmium	20.0	18.54		ug/L		93	80 - 120	
Cobalt	20.0	19.64		ug/L		98	80 - 120	
Molybdenum	20.0	19.22		ug/L		96	80 - 120	
Selenium	20.0	18.04		ug/L		90	80 - 120	
Thallium	20.0	19.55		ug/L		98	80 - 120	

**Lab Sample ID: MB 480-365615/1-A**  
**Matrix: Water**  
**Analysis Batch: 365903**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		1.0		ug/L		07/06/17 10:57	07/07/17 05:59	1
Arsenic	ND		1.0		ug/L		07/06/17 10:57	07/07/17 05:59	1
Beryllium	ND		0.70		ug/L		07/06/17 10:57	07/07/17 05:59	1
Cadmium	ND		0.50		ug/L		07/06/17 10:57	07/07/17 05:59	1
Cobalt	ND		0.30		ug/L		07/06/17 10:57	07/07/17 05:59	1
Molybdenum	ND		1.0		ug/L		07/06/17 10:57	07/07/17 05:59	1
Selenium	ND	^	1.0		ug/L		07/06/17 10:57	07/07/17 05:59	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-365615/1-A**  
**Matrix: Water**  
**Analysis Batch: 365903**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.20		ug/L		07/06/17 10:57	07/07/17 05:59	1

**Lab Sample ID: LCS 480-365615/2-A**  
**Matrix: Water**  
**Analysis Batch: 365903**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	18.77		ug/L		94	80 - 120
Arsenic	20.0	18.71		ug/L		94	80 - 120
Beryllium	20.0	18.75		ug/L		94	80 - 120
Cadmium	20.0	18.40		ug/L		92	80 - 120
Cobalt	20.0	19.54		ug/L		98	80 - 120
Molybdenum	20.0	18.80		ug/L		94	80 - 120
Thallium	20.0	19.40		ug/L		97	80 - 120

**Lab Sample ID: LCS 480-365615/2-A**  
**Matrix: Water**  
**Analysis Batch: 366097**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	20.16		ug/L		101	80 - 120
Arsenic	20.0	20.03		ug/L		100	80 - 120
Beryllium	20.0	20.27		ug/L		101	80 - 120
Cadmium	20.0	19.69		ug/L		98	80 - 120
Cobalt	20.0	20.88		ug/L		104	80 - 120
Molybdenum	20.0	20.34		ug/L		102	80 - 120
Thallium	20.0	20.77		ug/L		104	80 - 120

**Lab Sample ID: LCS 480-365615/2-A**  
**Matrix: Water**  
**Analysis Batch: 366365**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Selenium	20.0	18.93		ug/L		95	80 - 120

**Lab Sample ID: 480-120277-3 MS**  
**Matrix: Water**  
**Analysis Batch: 365903**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	19.49		ug/L		97	75 - 125
Arsenic	1.4		20.0	20.84		ug/L		97	75 - 125
Beryllium	ND		20.0	18.46		ug/L		92	75 - 125
Cadmium	ND		20.0	18.03		ug/L		90	75 - 125
Cobalt	0.30		20.0	19.21		ug/L		95	75 - 125
Molybdenum	ND		20.0	19.48		ug/L		96	75 - 125
Thallium	ND		20.0	19.08		ug/L		95	75 - 125

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-120277-3 MS**  
**Matrix: Water**  
**Analysis Batch: 366097**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	
Antimony	ND		20.0	21.26		ug/L		106	75 - 125	
Arsenic	1.5		20.0	21.99		ug/L		103	75 - 125	
Beryllium	ND		20.0	19.65		ug/L		98	75 - 125	
Cadmium	ND		20.0	19.20		ug/L		96	75 - 125	
Cobalt	0.32		20.0	20.40		ug/L		100	75 - 125	
Molybdenum	ND		20.0	20.79		ug/L		102	75 - 125	
Thallium	ND		20.0	20.20		ug/L		101	75 - 125	

**Lab Sample ID: 480-120277-3 MS**  
**Matrix: Water**  
**Analysis Batch: 366365**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	
Selenium	2.1		20.0	21.16		ug/L		95	75 - 125	

**Lab Sample ID: 480-120277-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 365903**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	
				Result	Qualifier				Limits	RPD	Limit	
Antimony	ND		20.0	19.94		ug/L		100	75 - 125	2	20	
Arsenic	1.4		20.0	20.71		ug/L		97	75 - 125	1	20	
Beryllium	ND		20.0	18.84		ug/L		94	75 - 125	2	20	
Cadmium	ND		20.0	18.71		ug/L		94	75 - 125	4	20	
Cobalt	0.30		20.0	19.46		ug/L		96	75 - 125	1	20	
Molybdenum	ND		20.0	19.93		ug/L		98	75 - 125	2	20	
Thallium	ND		20.0	19.30		ug/L		97	75 - 125	1	20	

**Lab Sample ID: 480-120277-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 366097**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	
				Result	Qualifier				Limits	RPD	Limit	
Antimony	ND		20.0	21.35		ug/L		107	75 - 125	0	20	
Arsenic	1.5		20.0	22.23		ug/L		104	75 - 125	1	20	
Beryllium	ND		20.0	19.64		ug/L		98	75 - 125	0	20	
Cadmium	ND		20.0	19.41		ug/L		97	75 - 125	1	20	
Cobalt	0.32		20.0	20.27		ug/L		100	75 - 125	1	20	
Molybdenum	ND		20.0	20.98		ug/L		103	75 - 125	1	20	
Thallium	ND		20.0	20.75		ug/L		104	75 - 125	3	20	

**Lab Sample ID: 480-120277-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 366365**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 365615**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	
				Result	Qualifier				Limits	RPD	Limit	
Selenium	2.1		20.0	21.81		ug/L		98	75 - 125	3	20	

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-366700/1-A**  
**Matrix: Water**  
**Analysis Batch: 366948**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 366700**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		1.0		ug/L		07/13/17 08:00	07/13/17 23:12	1

**Lab Sample ID: LCS 480-366700/2-A**  
**Matrix: Water**  
**Analysis Batch: 366948**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 366700**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Selenium	20.0	20.20		ug/L		101	80 - 120

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-364652/1-A**  
**Matrix: Water**  
**Analysis Batch: 364966**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 364652**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/29/17 09:40	06/29/17 14:20	1

**Lab Sample ID: LCS 480-364652/2-A**  
**Matrix: Water**  
**Analysis Batch: 364966**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364652**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.37		ug/L		95	80 - 120

**Lab Sample ID: MB 480-364903/1-A**  
**Matrix: Water**  
**Analysis Batch: 365026**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 364903**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		06/30/17 09:40	06/30/17 14:23	1

**Lab Sample ID: LCS 480-364903/2-A**  
**Matrix: Water**  
**Analysis Batch: 365026**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364903**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.38		ug/L		96	80 - 120

**Lab Sample ID: 480-120371-2 MS**  
**Matrix: Water**  
**Analysis Batch: 365026**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 364903**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.35		ug/L		95	80 - 120

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: 480-120371-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 365026**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 364903**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	6.32		ug/L		95	80 - 120	1	20

**Lab Sample ID: MB 480-365189/1-A**  
**Matrix: Water**  
**Analysis Batch: 365309**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365189**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/03/17 09:30	07/03/17 12:51	1

**Lab Sample ID: LCS 480-365189/2-A**  
**Matrix: Water**  
**Analysis Batch: 365309**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365189**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	5.57		ug/L		83	80 - 120

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-366389/28**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/11/17 22:15	1
Fluoride	ND		0.050		mg/L			07/11/17 22:15	1
Sulfate	ND		2.0		mg/L			07/11/17 22:15	1

**Lab Sample ID: MB 480-366389/4**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/11/17 18:59	1
Fluoride	ND		0.050		mg/L			07/11/17 18:59	1
Sulfate	ND		2.0		mg/L			07/11/17 18:59	1

**Lab Sample ID: LCS 480-366389/27**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chloride	50.0	52.23		mg/L		104	90 - 110
Fluoride	5.00	5.04		mg/L		101	90 - 110
Sulfate	50.0	51.08		mg/L		102	90 - 110

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 480-366389/3**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.14		mg/L		104	90 - 110
Fluoride	5.00	5.08		mg/L		102	90 - 110
Sulfate	50.0	50.81		mg/L		102	90 - 110

**Lab Sample ID: 480-120277-3 MS**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	148		250	406.1		mg/L		103	81 - 120
Fluoride	ND		25.0	25.77		mg/L		103	82 - 120
Sulfate	27.3		250	286.7		mg/L		104	80 - 120

**Lab Sample ID: 480-120371-1 MS**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	41.4		250	308.4		mg/L		107	81 - 120
Fluoride	ND		25.0	25.88		mg/L		104	82 - 120
Sulfate	31.2		250	292.2		mg/L		104	80 - 120

**Lab Sample ID: 480-120371-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 366389**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	41.4		250	308.6		mg/L		107	81 - 120	0	20
Fluoride	ND		25.0	25.93		mg/L		104	82 - 120	0	20
Sulfate	31.2		250	292.6		mg/L		105	80 - 120	0	20

**Lab Sample ID: MB 480-366814/28**  
**Matrix: Water**  
**Analysis Batch: 366814**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			07/13/17 19:22	1
Fluoride	ND		0.050		mg/L			07/13/17 19:22	1
Sulfate	ND		2.0		mg/L			07/13/17 19:22	1

**Lab Sample ID: LCS 480-366814/27**  
**Matrix: Water**  
**Analysis Batch: 366814**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.23		mg/L		104	90 - 110
Fluoride	5.00	5.05		mg/L		101	90 - 110
Sulfate	50.0	52.05		mg/L		104	90 - 110

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-120451-5 MS**  
**Matrix: Water**  
**Analysis Batch: 366814**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.5		250	284.9		mg/L		106	81 - 120
Fluoride	ND		25.0	25.70		mg/L		103	82 - 120
Sulfate	48.2		250	313.5		mg/L		106	80 - 120

**Lab Sample ID: 480-120451-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 366814**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.5		250	285.9		mg/L		106	81 - 120	0	20
Fluoride	ND		25.0	25.80		mg/L		103	82 - 120	0	20
Sulfate	48.2		250	314.6		mg/L		107	80 - 120	0	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-364861/1**  
**Matrix: Water**  
**Analysis Batch: 364861**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			06/30/17 02:13	1

**Lab Sample ID: LCS 480-364861/2**  
**Matrix: Water**  
**Analysis Batch: 364861**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	504	501.0		mg/L		99	85 - 115

**Lab Sample ID: 480-120277-5 DU**  
**Matrix: Water**  
**Analysis Batch: 364861**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	688		682.0		mg/L		0.9	10

**Lab Sample ID: MB 480-365042/1**  
**Matrix: Water**  
**Analysis Batch: 365042**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			06/30/17 17:48	1

**Lab Sample ID: LCS 480-365042/2**  
**Matrix: Water**  
**Analysis Batch: 365042**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	513	491.0		mg/L		96	85 - 115

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: 480-120371-4 DU**  
**Matrix: Water**  
**Analysis Batch: 365042**

**Client Sample ID: D-3S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Dissolved Solids	456		446.0		mg/L		2	10

**Lab Sample ID: MB 480-365459/1**  
**Matrix: Water**  
**Analysis Batch: 365459**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	ND		10.0		mg/L			07/05/17 13:43	1

**Lab Sample ID: LCS 480-365459/2**  
**Matrix: Water**  
**Analysis Batch: 365459**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Dissolved Solids	504	494.0		mg/L		98	85 - 115

**Lab Sample ID: 480-120371-6 DU**  
**Matrix: Water**  
**Analysis Batch: 365459**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Dissolved Solids	500		510.0		mg/L		2	10

**Lab Sample ID: MB 480-365540/1**  
**Matrix: Water**  
**Analysis Batch: 365540**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	ND		10.0		mg/L			07/05/17 17:42	1

**Lab Sample ID: LCS 480-365540/2**  
**Matrix: Water**  
**Analysis Batch: 365540**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Dissolved Solids	504	494.0		mg/L		98	85 - 115

**Lab Sample ID: 480-120451-4 DU**  
**Matrix: Water**  
**Analysis Batch: 365540**

**Client Sample ID: D-4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Dissolved Solids	449		465.0		mg/L		4	10



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-364838/1**  
**Matrix: Water**  
**Analysis Batch: 364838**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-365023/1**  
**Matrix: Water**  
**Analysis Batch: 365023**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-365149/1**  
**Matrix: Water**  
**Analysis Batch: 365149**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: 480-120451-4 DU**  
**Matrix: Water**  
**Analysis Batch: 365149**

**Client Sample ID: D-4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	HF	7.5		SU		0.5	5
Temperature	21.5	HF	21.8		Degrees C		1	10

**Lab Sample ID: LCS 480-365150/1**  
**Matrix: Water**  
**Analysis Batch: 365150**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	99 - 101

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Metals

### Prep Batch: 364652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	7470A	
480-120277-2	U-4D	Total/NA	Water	7470A	
480-120277-3	U-5S	Total/NA	Water	7470A	
480-120277-4	U-5D	Total/NA	Water	7470A	
480-120277-5	DUP-1	Total/NA	Water	7470A	
480-120277-6	FIELD BLANK 1	Total/NA	Water	7470A	
MB 480-364652/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-364652/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 364812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	3005A	
480-120277-2	U-4D	Total/NA	Water	3005A	
480-120277-3	U-5S	Total/NA	Water	3005A	
480-120277-4	U-5D	Total/NA	Water	3005A	
480-120277-5	DUP-1	Total/NA	Water	3005A	
480-120277-6	FIELD BLANK 1	Total/NA	Water	3005A	
MB 480-364812/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-364812/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-120277-2 MS	U-4D	Total/NA	Water	3005A	
480-120277-2 MSD	U-4D	Total/NA	Water	3005A	

### Prep Batch: 364903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	7470A	
480-120371-2	D-1S	Total/NA	Water	7470A	
480-120371-3	D-3D	Total/NA	Water	7470A	
480-120371-4	D-3S	Total/NA	Water	7470A	
480-120371-5	D-5D	Total/NA	Water	7470A	
480-120371-6	D-5S2	Total/NA	Water	7470A	
480-120371-7	DUPLICATE-2	Total/NA	Water	7470A	
480-120371-8	FIELD BLANK 2	Total/NA	Water	7470A	
MB 480-364903/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-364903/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-120371-2 MS	D-1S	Total/NA	Water	7470A	
480-120371-2 MSD	D-1S	Total/NA	Water	7470A	

### Analysis Batch: 364966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	7470A	364652
480-120277-2	U-4D	Total/NA	Water	7470A	364652
480-120277-3	U-5S	Total/NA	Water	7470A	364652
480-120277-4	U-5D	Total/NA	Water	7470A	364652
480-120277-5	DUP-1	Total/NA	Water	7470A	364652
480-120277-6	FIELD BLANK 1	Total/NA	Water	7470A	364652
MB 480-364652/1-A	Method Blank	Total/NA	Water	7470A	364652
LCS 480-364652/2-A	Lab Control Sample	Total/NA	Water	7470A	364652

### Analysis Batch: 365026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	7470A	364903

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Metals (Continued)

### Analysis Batch: 365026 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-2	D-1S	Total/NA	Water	7470A	364903
480-120371-3	D-3D	Total/NA	Water	7470A	364903
480-120371-4	D-3S	Total/NA	Water	7470A	364903
480-120371-5	D-5D	Total/NA	Water	7470A	364903
480-120371-6	D-5S2	Total/NA	Water	7470A	364903
480-120371-7	DUPLICATE-2	Total/NA	Water	7470A	364903
480-120371-8	FIELD BLANK 2	Total/NA	Water	7470A	364903
MB 480-364903/1-A	Method Blank	Total/NA	Water	7470A	364903
LCS 480-364903/2-A	Lab Control Sample	Total/NA	Water	7470A	364903
480-120371-2 MS	D-1S	Total/NA	Water	7470A	364903
480-120371-2 MSD	D-1S	Total/NA	Water	7470A	364903

### Prep Batch: 365189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	7470A	
480-120451-2	D-2D	Total/NA	Water	7470A	
480-120451-3	D-4S	Total/NA	Water	7470A	
480-120451-4	D-4D	Total/NA	Water	7470A	
480-120451-5	D-8	Total/NA	Water	7470A	
480-120451-6	D-9	Total/NA	Water	7470A	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	7470A	
MB 480-365189/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-365189/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 365309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	7470A	365189
480-120451-2	D-2D	Total/NA	Water	7470A	365189
480-120451-3	D-4S	Total/NA	Water	7470A	365189
480-120451-4	D-4D	Total/NA	Water	7470A	365189
480-120451-5	D-8	Total/NA	Water	7470A	365189
480-120451-6	D-9	Total/NA	Water	7470A	365189
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	7470A	365189
MB 480-365189/1-A	Method Blank	Total/NA	Water	7470A	365189
LCS 480-365189/2-A	Lab Control Sample	Total/NA	Water	7470A	365189

### Prep Batch: 365434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	3005A	
480-120371-2	D-1S	Total/NA	Water	3005A	
480-120371-3	D-3D	Total/NA	Water	3005A	
480-120371-4	D-3S	Total/NA	Water	3005A	
480-120371-5	D-5D	Total/NA	Water	3005A	
480-120371-6	D-5S2	Total/NA	Water	3005A	
480-120371-7	DUPLICATE-2	Total/NA	Water	3005A	
480-120371-8	FIELD BLANK 2	Total/NA	Water	3005A	
MB 480-365434/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-365434/2-A	Lab Control Sample	Total/NA	Water	3005A	

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Metals (Continued)

### Prep Batch: 365435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	3005A	
480-120451-2	D-2D	Total/NA	Water	3005A	
480-120451-3	D-4S	Total/NA	Water	3005A	
480-120451-4	D-4D	Total/NA	Water	3005A	
480-120451-5	D-8	Total/NA	Water	3005A	
480-120451-6	D-9	Total/NA	Water	3005A	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	3005A	
MB 480-365435/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-365435/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-120451-1 MS	D-2S	Total/NA	Water	3005A	
480-120451-1 MSD	D-2S	Total/NA	Water	3005A	

### Prep Batch: 365439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	3020A	
480-120371-2	D-1S	Total/NA	Water	3020A	
480-120371-3	D-3D	Total/NA	Water	3020A	
480-120371-4	D-3S	Total/NA	Water	3020A	
480-120371-5	D-5D	Total/NA	Water	3020A	
480-120371-6	D-5S2	Total/NA	Water	3020A	
480-120371-7	DUPLICATE-2	Total/NA	Water	3020A	
480-120371-8	FIELD BLANK 2	Total/NA	Water	3020A	
MB 480-365439/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-365439/2-A	Lab Control Sample	Total/NA	Water	3020A	

### Analysis Batch: 365471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	6010C	364812
480-120277-2	U-4D	Total/NA	Water	6010C	364812
480-120277-3	U-5S	Total/NA	Water	6010C	364812
480-120277-4	U-5D	Total/NA	Water	6010C	364812
480-120277-5	DUP-1	Total/NA	Water	6010C	364812
480-120277-6	FIELD BLANK 1	Total/NA	Water	6010C	364812
MB 480-364812/1-A	Method Blank	Total/NA	Water	6010C	364812
LCS 480-364812/2-A	Lab Control Sample	Total/NA	Water	6010C	364812
480-120277-2 MS	U-4D	Total/NA	Water	6010C	364812
480-120277-2 MSD	U-4D	Total/NA	Water	6010C	364812

### Prep Batch: 365615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	3020A	
480-120277-2	U-4D	Total/NA	Water	3020A	
480-120277-3	U-5S	Total/NA	Water	3020A	
480-120277-4	U-5D	Total/NA	Water	3020A	
480-120277-5	DUP-1	Total/NA	Water	3020A	
480-120277-6	FIELD BLANK 1	Total/NA	Water	3020A	
480-120451-1	D-2S	Total/NA	Water	3020A	
480-120451-2	D-2D	Total/NA	Water	3020A	
480-120451-3	D-4S	Total/NA	Water	3020A	
480-120451-4	D-4D	Total/NA	Water	3020A	
480-120451-5	D-8	Total/NA	Water	3020A	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Metals (Continued)

### Prep Batch: 365615 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-6	D-9	Total/NA	Water	3020A	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	3020A	
MB 480-365615/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-365615/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-120277-3 MS	U-5S	Total/NA	Water	3020A	
480-120277-3 MSD	U-5S	Total/NA	Water	3020A	

### Analysis Batch: 365893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	6010C	365435
480-120451-2	D-2D	Total/NA	Water	6010C	365435
480-120451-3	D-4S	Total/NA	Water	6010C	365435
480-120451-4	D-4D	Total/NA	Water	6010C	365435
480-120451-5	D-8	Total/NA	Water	6010C	365435
480-120451-6	D-9	Total/NA	Water	6010C	365435
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	6010C	365435
MB 480-365435/1-A	Method Blank	Total/NA	Water	6010C	365435
LCS 480-365435/2-A	Lab Control Sample	Total/NA	Water	6010C	365435
480-120451-1 MS	D-2S	Total/NA	Water	6010C	365435
480-120451-1 MSD	D-2S	Total/NA	Water	6010C	365435

### Analysis Batch: 365900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	6020A	365439
480-120371-2	D-1S	Total/NA	Water	6020A	365439
480-120371-3	D-3D	Total/NA	Water	6020A	365439
480-120371-4	D-3S	Total/NA	Water	6020A	365439
480-120371-5	D-5D	Total/NA	Water	6020A	365439
480-120371-6	D-5S2	Total/NA	Water	6020A	365439
480-120371-7	DUPLICATE-2	Total/NA	Water	6020A	365439
480-120371-8	FIELD BLANK 2	Total/NA	Water	6020A	365439
MB 480-365439/1-A	Method Blank	Total/NA	Water	6020A	365439
LCS 480-365439/2-A	Lab Control Sample	Total/NA	Water	6020A	365439

### Analysis Batch: 365903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	6020A	365615
480-120277-2	U-4D	Total/NA	Water	6020A	365615
480-120277-3	U-5S	Total/NA	Water	6020A	365615
480-120277-4	U-5D	Total/NA	Water	6020A	365615
480-120277-5	DUP-1	Total/NA	Water	6020A	365615
480-120277-6	FIELD BLANK 1	Total/NA	Water	6020A	365615
480-120451-1	D-2S	Total/NA	Water	6020A	365615
480-120451-2	D-2D	Total/NA	Water	6020A	365615
480-120451-3	D-4S	Total/NA	Water	6020A	365615
480-120451-4	D-4D	Total/NA	Water	6020A	365615
480-120451-5	D-8	Total/NA	Water	6020A	365615
480-120451-6	D-9	Total/NA	Water	6020A	365615
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	6020A	365615
MB 480-365615/1-A	Method Blank	Total/NA	Water	6020A	365615
LCS 480-365615/2-A	Lab Control Sample	Total/NA	Water	6020A	365615

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## Metals (Continued)

### Analysis Batch: 365903 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-3 MS	U-5S	Total/NA	Water	6020A	365615
480-120277-3 MSD	U-5S	Total/NA	Water	6020A	365615

### Analysis Batch: 366097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-4	D-4D	Total/NA	Water	6020A	365615
LCS 480-365615/2-A	Lab Control Sample	Total/NA	Water	6020A	365615
480-120277-3 MS	U-5S	Total/NA	Water	6020A	365615
480-120277-3 MSD	U-5S	Total/NA	Water	6020A	365615

### Analysis Batch: 366110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	6010C	365434
480-120371-2	D-1S	Total/NA	Water	6010C	365434
480-120371-3	D-3D	Total/NA	Water	6010C	365434
480-120371-4	D-3S	Total/NA	Water	6010C	365434
480-120371-5	D-5D	Total/NA	Water	6010C	365434
480-120371-6	D-5S2	Total/NA	Water	6010C	365434
480-120371-7	DUPLICATE-2	Total/NA	Water	6010C	365434
480-120371-8	FIELD BLANK 2	Total/NA	Water	6010C	365434
MB 480-365434/1-A	Method Blank	Total/NA	Water	6010C	365434
LCS 480-365434/2-A	Lab Control Sample	Total/NA	Water	6010C	365434

### Analysis Batch: 366365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	6020A	365615
480-120277-3	U-5S	Total/NA	Water	6020A	365615
480-120277-5	DUP-1	Total/NA	Water	6020A	365615
480-120451-1	D-2S	Total/NA	Water	6020A	365615
480-120451-2	D-2D	Total/NA	Water	6020A	365615
480-120451-3	D-4S	Total/NA	Water	6020A	365615
LCS 480-365615/2-A	Lab Control Sample	Total/NA	Water	6020A	365615
480-120277-3 MS	U-5S	Total/NA	Water	6020A	365615
480-120277-3 MSD	U-5S	Total/NA	Water	6020A	365615

### Prep Batch: 366700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-4	U-5D	Total/NA	Water	3020A	
MB 480-366700/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-366700/2-A	Lab Control Sample	Total/NA	Water	3020A	

### Analysis Batch: 366845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	6010C	365434

### Analysis Batch: 366948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-4	U-5D	Total/NA	Water	6020A	366700
MB 480-366700/1-A	Method Blank	Total/NA	Water	6020A	366700
LCS 480-366700/2-A	Lab Control Sample	Total/NA	Water	6020A	366700

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## General Chemistry

### Analysis Batch: 364838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	SM 4500 H+ B	
480-120277-2	U-4D	Total/NA	Water	SM 4500 H+ B	
480-120277-3	U-5S	Total/NA	Water	SM 4500 H+ B	
480-120277-4	U-5D	Total/NA	Water	SM 4500 H+ B	
480-120277-5	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-120277-6	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
LCS 480-364838/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 364861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	SM 2540C	
480-120277-2	U-4D	Total/NA	Water	SM 2540C	
480-120277-3	U-5S	Total/NA	Water	SM 2540C	
480-120277-4	U-5D	Total/NA	Water	SM 2540C	
480-120277-5	DUP-1	Total/NA	Water	SM 2540C	
480-120277-6	FIELD BLANK 1	Total/NA	Water	SM 2540C	
MB 480-364861/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-364861/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-120277-5 DU	DUP-1	Total/NA	Water	SM 2540C	

### Analysis Batch: 365023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	SM 4500 H+ B	
480-120371-2	D-1S	Total/NA	Water	SM 4500 H+ B	
480-120371-3	D-3D	Total/NA	Water	SM 4500 H+ B	
480-120371-4	D-3S	Total/NA	Water	SM 4500 H+ B	
480-120371-5	D-5D	Total/NA	Water	SM 4500 H+ B	
480-120371-6	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-120371-7	DUPLICATE-2	Total/NA	Water	SM 4500 H+ B	
480-120371-8	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	
LCS 480-365023/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 365042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	SM 2540C	
480-120371-2	D-1S	Total/NA	Water	SM 2540C	
480-120371-3	D-3D	Total/NA	Water	SM 2540C	
480-120371-4	D-3S	Total/NA	Water	SM 2540C	
MB 480-365042/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-365042/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-120371-4 DU	D-3S	Total/NA	Water	SM 2540C	

### Analysis Batch: 365149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	SM 4500 H+ B	
480-120451-2	D-2D	Total/NA	Water	SM 4500 H+ B	
480-120451-3	D-4S	Total/NA	Water	SM 4500 H+ B	
480-120451-4	D-4D	Total/NA	Water	SM 4500 H+ B	
LCS 480-365149/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-120451-4 DU	D-4D	Total/NA	Water	SM 4500 H+ B	

TestAmerica Buffalo



# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

## General Chemistry (Continued)

### Analysis Batch: 365150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-5	D-8	Total/NA	Water	SM 4500 H+ B	
480-120451-6	D-9	Total/NA	Water	SM 4500 H+ B	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 480-365150/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 365459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-5	D-5D	Total/NA	Water	SM 2540C	
480-120371-6	D-5S2	Total/NA	Water	SM 2540C	
MB 480-365459/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-365459/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-120371-6 DU	D-5S2	Total/NA	Water	SM 2540C	

### Analysis Batch: 365540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-7	DUPLICATE-2	Total/NA	Water	SM 2540C	
480-120371-8	FIELD BLANK 2	Total/NA	Water	SM 2540C	
480-120451-1	D-2S	Total/NA	Water	SM 2540C	
480-120451-2	D-2D	Total/NA	Water	SM 2540C	
480-120451-3	D-4S	Total/NA	Water	SM 2540C	
480-120451-4	D-4D	Total/NA	Water	SM 2540C	
480-120451-5	D-8	Total/NA	Water	SM 2540C	
480-120451-6	D-9	Total/NA	Water	SM 2540C	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-365540/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-365540/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-120451-4 DU	D-4D	Total/NA	Water	SM 2540C	

### Analysis Batch: 366389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	300.0	
480-120277-2	U-4D	Total/NA	Water	300.0	
480-120277-3	U-5S	Total/NA	Water	300.0	
480-120277-4	U-5D	Total/NA	Water	300.0	
480-120277-5	DUP-1	Total/NA	Water	300.0	
480-120277-6	FIELD BLANK 1	Total/NA	Water	300.0	
480-120371-1	D-1D	Total/NA	Water	300.0	
480-120371-2	D-1S	Total/NA	Water	300.0	
480-120371-3	D-3D	Total/NA	Water	300.0	
480-120371-4	D-3S	Total/NA	Water	300.0	
480-120371-5	D-5D	Total/NA	Water	300.0	
480-120371-6	D-5S2	Total/NA	Water	300.0	
480-120371-7	DUPLICATE-2	Total/NA	Water	300.0	
480-120371-8	FIELD BLANK 2	Total/NA	Water	300.0	
MB 480-366389/28	Method Blank	Total/NA	Water	300.0	
MB 480-366389/4	Method Blank	Total/NA	Water	300.0	
LCS 480-366389/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-366389/3	Lab Control Sample	Total/NA	Water	300.0	
480-120277-3 MS	U-5S	Total/NA	Water	300.0	
480-120371-1 MS	D-1D	Total/NA	Water	300.0	
480-120371-1 MSD	D-1D	Total/NA	Water	300.0	

TestAmerica Buffalo



# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Analysis Batch: 366814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	300.0	
480-120451-2	D-2D	Total/NA	Water	300.0	
480-120451-3	D-4S	Total/NA	Water	300.0	
480-120451-4	D-4D	Total/NA	Water	300.0	
480-120451-5	D-8	Total/NA	Water	300.0	
480-120451-6	D-9	Total/NA	Water	300.0	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	300.0	
MB 480-366814/28	Method Blank	Total/NA	Water	300.0	
LCS 480-366814/27	Lab Control Sample	Total/NA	Water	300.0	
480-120451-5 MS	D-8	Total/NA	Water	300.0	
480-120451-5 MSD	D-8	Total/NA	Water	300.0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: U-4S**  
**Date Collected: 06/26/17 11:40**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365471	07/03/17 10:29	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 06:10	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 18:47	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 14:52	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 21:18	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:10	ALZ	TAL BUF

**Client Sample ID: U-4D**  
**Date Collected: 06/26/17 11:50**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365471	07/03/17 10:32	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 06:16	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 14:54	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 21:26	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:13	ALZ	TAL BUF

**Client Sample ID: U-5S**  
**Date Collected: 06/26/17 13:45**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365471	07/03/17 10:49	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 06:21	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 18:52	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 14:56	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 21:34	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

**Client Sample ID: U-5S**  
**Date Collected: 06/26/17 13:45**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:24	ALZ	TAL BUF

**Client Sample ID: U-5D**  
**Date Collected: 06/26/17 13:55**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365471	07/03/17 10:53	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:06	JRK	TAL BUF
Total/NA	Prep	3020A			366700	07/13/17 08:00	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366948	07/13/17 23:23	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 14:58	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 22:23	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:16	ALZ	TAL BUF

**Client Sample ID: DUP-1**  
**Date Collected: 06/26/17 00:00**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365471	07/03/17 10:56	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:12	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 19:25	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 15:00	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 22:31	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:19	ALZ	TAL BUF

**Client Sample ID: FIELD BLANK 1**  
**Date Collected: 06/26/17 15:20**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			364812	06/30/17 09:30	EMB	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-120277-6**

**Date Collected: 06/26/17 15:20**

**Matrix: Water**

**Date Received: 06/28/17 09:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	365471	07/03/17 11:10	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:17	JRK	TAL BUF
Total/NA	Prep	7470A			364652	06/29/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	364966	06/29/17 15:02	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	366389	07/11/17 22:39	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	364861	06/30/17 02:13	KMB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	364838	06/29/17 16:22	ALZ	TAL BUF

**Client Sample ID: D-1D**

**Lab Sample ID: 480-120371-1**

**Date Collected: 06/27/17 14:30**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366845	07/13/17 10:49	AMH	TAL BUF
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 10:34	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 19:40	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:27	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 23:04	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365042	06/30/17 17:48	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:07	ALZ	TAL BUF

**Client Sample ID: D-1S**

**Lab Sample ID: 480-120371-2**

**Date Collected: 06/27/17 13:25**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 10:47	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 19:46	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:29	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 23:44	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365042	06/30/17 17:48	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:10	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-3D**  
**Date Collected: 06/27/17 10:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 10:51	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 19:51	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:36	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/11/17 23:52	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365042	06/30/17 17:48	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:12	ALZ	TAL BUF

**Client Sample ID: D-3S**  
**Date Collected: 06/27/17 10:10**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 10:54	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 19:57	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:41	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/12/17 00:01	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365042	06/30/17 17:48	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:15	ALZ	TAL BUF

**Client Sample ID: D-5D**  
**Date Collected: 06/27/17 08:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 10:58	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 20:02	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:42	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/12/17 00:09	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365459	07/05/17 13:43	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:17	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-120371-6**

**Date Collected: 06/27/17 07:40**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 11:01	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 20:25	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:44	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366389	07/12/17 00:17	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365459	07/05/17 13:43	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:20	ALZ	TAL BUF

**Client Sample ID: DUPLICATE-2**

**Lab Sample ID: 480-120371-7**

**Date Collected: 06/27/17 00:00**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 11:04	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 20:31	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:46	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	366389	07/12/17 00:25	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:23	ALZ	TAL BUF

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-120371-8**

**Date Collected: 06/27/17 12:15**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365434	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	366110	07/08/17 11:08	LMH	TAL BUF
Total/NA	Prep	3020A			365439	07/06/17 08:20	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365900	07/06/17 20:36	JRK	TAL BUF
Total/NA	Prep	7470A			364903	06/30/17 09:40	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365026	06/30/17 14:48	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	366389	07/12/17 00:33	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365023	06/30/17 15:28	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

**Client Sample ID: D-2S**  
**Date Collected: 06/28/17 09:05**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:11	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:28	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 19:48	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:15	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366814	07/13/17 19:39	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365149	07/02/17 13:19	DSC	TAL BUF

**Client Sample ID: D-2D**  
**Date Collected: 06/28/17 09:25**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:38	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:34	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 19:54	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:17	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366814	07/13/17 19:47	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365149	07/02/17 13:22	DSC	TAL BUF

**Client Sample ID: D-4S**  
**Date Collected: 06/28/17 11:10**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:41	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:39	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366365	07/10/17 19:59	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:19	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366814	07/13/17 19:55	RJS	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365149	07/02/17 13:24	DSC	TAL BUF

## Client Sample ID: D-4D

## Lab Sample ID: 480-120451-4

Date Collected: 06/28/17 11:35

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:44	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:45	JRK	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	366097	07/07/17 17:34	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:21	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366814	07/13/17 20:03	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365149	07/02/17 13:27	DSC	TAL BUF

## Client Sample ID: D-8

## Lab Sample ID: 480-120451-5

Date Collected: 06/28/17 12:40

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:48	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 07:50	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:23	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	366814	07/13/17 20:11	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365150	07/02/17 13:18	DSC	TAL BUF

## Client Sample ID: D-9

## Lab Sample ID: 480-120451-6

Date Collected: 06/28/17 13:45

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 19:51	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 08:13	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:25	MVZ	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
 SDG: 120277

**Client Sample ID: D-9**

**Lab Sample ID: 480-120451-6**

**Date Collected: 06/28/17 13:45**

**Matrix: Water**

**Date Received: 06/30/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	366814	07/13/17 20:52	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365150	07/02/17 13:21	DSC	TAL BUF

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-120451-7**

**Date Collected: 06/28/17 16:00**

**Matrix: Water**

**Date Received: 06/30/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			365435	07/06/17 08:40	EMB	TAL BUF
Total/NA	Analysis	6010C		1	365893	07/06/17 20:05	LMH	TAL BUF
Total/NA	Prep	3020A			365615	07/06/17 10:57	EMB	TAL BUF
Total/NA	Analysis	6020A		1	365903	07/07/17 08:19	JRK	TAL BUF
Total/NA	Prep	7470A			365189	07/03/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	365309	07/03/17 13:28	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	366814	07/13/17 21:00	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	365540	07/05/17 17:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	365150	07/02/17 13:24	DSC	TAL BUF

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-1  
SDG: 120277

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-120277-1	U-4S	Water	06/26/17 11:40	06/28/17 09:45
480-120277-2	U-4D	Water	06/26/17 11:50	06/28/17 09:45
480-120277-3	U-5S	Water	06/26/17 13:45	06/28/17 09:45
480-120277-4	U-5D	Water	06/26/17 13:55	06/28/17 09:45
480-120277-5	DUP-1	Water	06/26/17 00:00	06/28/17 09:45
480-120277-6	FIELD BLANK 1	Water	06/26/17 15:20	06/28/17 09:45
480-120371-1	D-1D	Water	06/27/17 14:30	06/29/17 09:00
480-120371-2	D-1S	Water	06/27/17 13:25	06/29/17 09:00
480-120371-3	D-3D	Water	06/27/17 10:30	06/29/17 09:00
480-120371-4	D-3S	Water	06/27/17 10:10	06/29/17 09:00
480-120371-5	D-5D	Water	06/27/17 08:30	06/29/17 09:00
480-120371-6	D-5S2	Water	06/27/17 07:40	06/29/17 09:00
480-120371-7	DUPLICATE-2	Water	06/27/17 00:00	06/29/17 09:00
480-120371-8	FIELD BLANK 2	Water	06/27/17 12:15	06/29/17 09:00
480-120451-1	D-2S	Water	06/28/17 09:05	06/30/17 09:30
480-120451-2	D-2D	Water	06/28/17 09:25	06/30/17 09:30
480-120451-3	D-4S	Water	06/28/17 11:10	06/30/17 09:30
480-120451-4	D-4D	Water	06/28/17 11:35	06/30/17 09:30
480-120451-5	D-8	Water	06/28/17 12:40	06/30/17 09:30
480-120451-6	D-9	Water	06/28/17 13:45	06/30/17 09:30
480-120451-7	EQUIPMENT BLANK	Water	06/28/17 16:00	06/30/17 09:30

<b>Client Contact</b>		<b>Regulatory Program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		<b>Project Manager:</b> Ryan Van Dette		<b>Site Contact:</b> Nathaniel Beineman		<b>Date:</b> 6/26/17		<b>COC No.:</b> 1 of 1 COCs					
<b>Tel/Fax:</b>		<b>Analysis Turnaround Time</b>		<b>Carrier:</b>		<b>Carrier:</b>		<b>Carrier:</b>		<b>Carrier:</b>					
13425 Courthouse Blvd		WORKING DAYS													
Rosemount, MN 55068		TAT if different from Below													
(651) 438-1500		2 weeks													
(651) 438-1549		1 week													
Project Name: RSMNT 2017 OCR GW Event 5		2 days													
Site:		1 day													
P O # 3063-17-00813															
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
V-45	6/26/17	11:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
V-4D	6/26/17	11:50	Grab	Water	7	X	X	X	X	X	X	X	X	X	
V-55	6/26/17	13:45	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Duplicate #1	6/26/17	-	Grab	Water	7	X	X	X	X	X	X	X	X	X	
V-5D	6/26/17	13:55	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Field Blank	6/26/17	15:20	Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
			Grab	Water	7	X	X	X	X	X	X	X	X	X	
<b>Preservation Used:</b> 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other															
<b>Possible Hazard Identification:</b>															
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.															
Non-hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>															
<b>*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium</b>															
Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months															
<b>Custody Seals Intact:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>Custody Seal No.:</b>		<b>Cooler Temp. (°C):</b> Obs'd: 31.0		<b>Obs'd:</b>		<b>Corr'd:</b>		<b>Therm ID No.:</b>		<b>Date/Time:</b>		<b>Date/Time:</b>	
Relinquished by: <i>MMW SMM</i>		Company: <i>GES</i>		Received by: <i>APB</i>		Company: <i>TA</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>	
Relinquished by: <i>APB</i>		Company: <i>TA</i>		Received by: <i>APB</i>		Company: <i>TA</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>	
Relinquished by: <i>APB</i>		Company: <i>TA</i>		Received in Laboratory by: <i>APB</i>		Company: <i>TA</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>		Date/Time: <i>6-27-17 12:00</i>	





SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CGR GW Event 5  
Site:  
P O # 3063-17-00813

Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Site Contact: 480-120371 COC  
Sampler: 1  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:									
						Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	
D-552	6/27/17	7:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-5D	6/27/17	8:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-3S	6/27/17	10:10	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-3D	6/27/17	10:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Duplicate Z	6/27/17	-	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Field Blank Z	6/27/17	12:15	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-1S	6/27/17	13:25	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-1D	6/27/17	14:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Cooler Temp. (°C): 30, 20, 3.6°C Corrd: \_\_\_\_\_

Therm ID No.: HEK


Received by: [Signature] Company: A Date/Time: 6/28/17 9:00

Received by: [Signature] Company: A Date/Time: 6/29/17 0900

Received in Laboratory by: [Signature] Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_





<b>Client Contact</b> SKB Environmental 13425 Courthouse Blvd Rosemount, MN 55068 (651) 438-1500 Phone (651) 438-1549 FAX Project Name: RSMNT 2017 OCR GW Event 5 Site: P O # 3063-17-00813		<b>Regulatory Program:</b> DW NPDES RCRA Other: Project Manager: Ryan Van Dette Tel/Fax:		<b>Site Contact:</b> Nathaniel Beineman Date: 6/28/17 Carrier:		COC No: 1 of 1 COCs Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:							
<b>Analysis Turnaround Time</b> WORKING DAYS CALENDAR DAYS TAT if different from Below 2 weeks 1 week 2 days 1 day		<b>Lab Contact:</b> Radium 226 & 228 combined Metals (total) + Mercury Filtered Sample (Y / N) Perform MS / MSD (Y / N) Sulfate Chloride Fluoride TDS		Sample Specific Notes: 480-120451 COC 		Sample Specific Notes:							
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Metals (total) + Mercury	Radium 226 & 228 combined	Sulfate	Chloride	Fluoride	TDS
D-25	6/28/17	9:05	Grab	Water	7			X	X	X	X	X	X
D-2D	6/28/17	9:25	Grab	Water	7			X	X	X	X	X	X
D-45	6/28/17	11:10	Grab	Water	7			X	X	X	X	X	X
D-4D	6/28/17	11:35	Grab	Water	7			X	X	X	X	X	X
D-8	6/28/17	12:40	Grab	Water	7			X	X	X	X	X	X
D-9	6/28/17	13:45	Grab	Water	7			X	X	X	X	X	X
Equipment Blank	6/28/17	16:00	Grab	Water	7			X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other  
**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Cooler Temp (°C): Obs'd: \_\_\_\_\_ Corrd: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: 6/29/17 7:00  
 Received by: \_\_\_\_\_ Date/Time: 6/30/17 0930  
 Received in Laboratory by: \_\_\_\_\_ Date/Time: \_\_\_\_\_



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-1

SDG Number: 120277

**Login Number: 120277**

**List Number: 1**

**Creator: Conway, Curtis R**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-1

SDG Number: 120277

**Login Number: 120371**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-1

SDG Number: 120277

**Login Number: 120451**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-120277-2

TestAmerica Sample Delivery Group: 120277

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

7/31/2017 2:06:03 PM

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

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Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

**Job ID: 480-120277-2**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-120277-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 6/28/2017 9:45 AM, 6/29/2017 9:00 AM and 6/30/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 7 coolers at receipt time were 2.0° C, 2.7° C, 3.0° C, 3.0° C, 3.0° C, 3.2° C and 3.6° C.

#### RAD

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-31655

Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

D-2S (480-120451-1), D-2D (480-120451-2), D-4S (480-120451-3), D-4D (480-120451-4), D-8 (480-120451-5), D-9 (480-120451-6) and EQUIPMENT BLANK (480-120451-7)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-316545

Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

D-2S (480-120451-1), D-2D (480-120451-2), D-4S (480-120451-3), D-4D (480-120451-4), D-8 (480-120451-5), D-9 (480-120451-6) and EQUIPMENT BLANK (480-120451-7)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

**Client Sample ID: U-4S**

**Lab Sample ID: 480-120277-1**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-120277-2**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-120277-3**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-120277-4**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-120277-5**

No Detections.

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-120277-6**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-120371-1**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-120371-2**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-120371-3**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-120371-4**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-120371-5**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-120371-6**

No Detections.

**Client Sample ID: DUPLICATE-2**

**Lab Sample ID: 480-120371-7**

No Detections.

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-120371-8**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

---

**Client Sample ID: D-2S****Lab Sample ID: 480-120451-1**

No Detections.

---

**Client Sample ID: D-2D****Lab Sample ID: 480-120451-2**

No Detections.

---

**Client Sample ID: D-4S****Lab Sample ID: 480-120451-3**

No Detections.

---

**Client Sample ID: D-4D****Lab Sample ID: 480-120451-4**

No Detections.

---

**Client Sample ID: D-8****Lab Sample ID: 480-120451-5**

No Detections.

---

**Client Sample ID: D-9****Lab Sample ID: 480-120451-6**

No Detections.

---

**Client Sample ID: EQUIPMENT BLANK****Lab Sample ID: 480-120451-7**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo





# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: U-4S**  
**Date Collected: 06/26/17 11:40**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.112		0.0679	0.0687	1.00	0.0876	pCi/L	07/05/17 10:51	07/27/17 05:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					07/05/17 10:51	07/27/17 05:59	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.383		0.222	0.225	1.00	0.332	pCi/L	07/05/17 12:26	07/14/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					07/05/17 12:26	07/14/17 14:25	1
Y Carrier	84.9		40 - 110					07/05/17 12:26	07/14/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: U-4D**  
**Date Collected: 06/26/17 11:50**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-2**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0349	U	0.0443	0.0445	1.00	0.0731	pCi/L	07/05/17 10:51	07/27/17 05:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					07/05/17 10:51	07/27/17 05:59	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.316	U	0.215	0.217	1.00	0.330	pCi/L	07/05/17 12:26	07/14/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					07/05/17 12:26	07/14/17 14:25	1
Y Carrier	84.9		40 - 110					07/05/17 12:26	07/14/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: U-5S**  
**Date Collected: 06/26/17 13:45**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-3**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.142		0.0695	0.0707	1.00	0.0792	pCi/L	07/05/17 10:51	07/27/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/05/17 10:51	07/27/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.421		0.220	0.223	1.00	0.324	pCi/L	07/05/17 12:26	07/14/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/05/17 12:26	07/14/17 14:25	1
Y Carrier	87.1		40 - 110					07/05/17 12:26	07/14/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: U-5D**  
**Date Collected: 06/26/17 13:55**  
**Date Received: 06/28/17 09:45**

**Lab Sample ID: 480-120277-4**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0237	U	0.0416	0.0416	1.00	0.0740	pCi/L	07/05/17 10:51	07/27/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					07/05/17 10:51	07/27/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.135	U	0.208	0.208	1.00	0.394	pCi/L	07/05/17 12:26	07/14/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					07/05/17 12:26	07/14/17 14:25	1
Y Carrier	83.4		40 - 110					07/05/17 12:26	07/14/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-120277-5**

Date Collected: 06/26/17 00:00

Matrix: Water

Date Received: 06/28/17 09:45

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.135		0.0715	0.0725	1.00	0.0869	pCi/L	07/05/17 10:51	07/27/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					07/05/17 10:51	07/27/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.190	U	0.215	0.216	1.00	0.353	pCi/L	07/05/17 12:26	07/14/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					07/05/17 12:26	07/14/17 14:25	1
Y Carrier	84.5		40 - 110					07/05/17 12:26	07/14/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-120277-6**

Date Collected: 06/26/17 15:20

Matrix: Water

Date Received: 06/28/17 09:45

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0531	U	0.0555	0.0557	1.00	0.0878	pCi/L	07/05/17 10:51	07/27/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/05/17 10:51	07/27/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0223	U	0.171	0.171	1.00	0.316	pCi/L	07/05/17 12:26	07/14/17 14:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/05/17 12:26	07/14/17 14:26	1
Y Carrier	82.6		40 - 110					07/05/17 12:26	07/14/17 14:26	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-1D**  
**Date Collected: 06/27/17 14:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0972		0.0578	0.0585	1.00	0.0686	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.283		0.167	0.169	1.00	0.250	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	106		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-1S**  
**Date Collected: 06/27/17 13:25**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-2**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0749	U	0.0632	0.0635	1.00	0.0944	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.188	U	0.172	0.173	1.00	0.276	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	94.3		40 - 110					07/07/17 13:12	07/17/17 15:03	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-3D**  
**Date Collected: 06/27/17 10:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-3**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0125	U	0.0469	0.0470	1.00	0.0903	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.129	U	0.183	0.184	1.00	0.307	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	99.3		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-3S**  
**Date Collected: 06/27/17 10:10**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-4**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0104	U	0.0319	0.0319	1.00	0.0771	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.270	U	0.180	0.182	1.00	0.278	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	102		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-5D**  
**Date Collected: 06/27/17 08:30**  
**Date Received: 06/29/17 09:00**

**Lab Sample ID: 480-120371-5**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00303	U	0.0421	0.0421	1.00	0.0859	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.171	U	0.171	0.172	1.00	0.277	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	103		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-120371-6**

Date Collected: 06/27/17 07:40

Matrix: Water

Date Received: 06/29/17 09:00

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0859		0.0590	0.0595	1.00	0.0792	pCi/L	07/07/17 12:29	07/31/17 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/07/17 12:29	07/31/17 05:54	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0331	U	0.149	0.149	1.00	0.275	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	107		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: DUPLICATE-2**

**Lab Sample ID: 480-120371-7**

Date Collected: 06/27/17 00:00

Matrix: Water

Date Received: 06/29/17 09:00

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0321	U	0.0428	0.0429	1.00	0.0715	pCi/L	07/07/17 12:29	07/31/17 05:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/07/17 12:29	07/31/17 05:55	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.103	U	0.158	0.159	1.00	0.266	pCi/L	07/07/17 13:12	07/17/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/07/17 13:12	07/17/17 15:03	1
Y Carrier	107		40 - 110					07/07/17 13:12	07/17/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-120371-8**

**Date Collected: 06/27/17 12:15**

**Matrix: Water**

**Date Received: 06/29/17 09:00**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0283	U	0.0402	0.0403	1.00	0.0951	pCi/L	07/07/17 12:29	07/31/17 05:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					07/07/17 12:29	07/31/17 05:56	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0304	U	0.159	0.159	1.00	0.281	pCi/L	07/07/17 13:12	07/17/17 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					07/07/17 13:12	07/17/17 15:00	1
Y Carrier	101		40 - 110					07/07/17 13:12	07/17/17 15:00	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-2S**  
**Date Collected: 06/28/17 09:05**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0926		0.0580	0.0586	1.00	0.0652	pCi/L	07/07/17 08:06	07/31/17 06:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 08:06	07/31/17 06:08	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0568	U	0.165	0.165	1.00	0.305	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	104		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-2D**  
**Date Collected: 06/28/17 09:25**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-2**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0184	U	0.0403	0.0403	1.00	0.0769	pCi/L	07/07/17 08:06	07/31/17 06:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					07/07/17 08:06	07/31/17 06:08	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.342		0.205	0.208	1.00	0.309	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	103		40 - 110					07/07/17 08:43	07/19/17 14:25	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-4S**  
**Date Collected: 06/28/17 11:10**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-3**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.120		0.0745	0.0753	1.00	0.0976	pCi/L	07/07/17 08:06	07/31/17 06:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					07/07/17 08:06	07/31/17 06:09	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.127	U	0.205	0.205	1.00	0.380	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	102		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-4D**  
**Date Collected: 06/28/17 11:35**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-4**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.108		0.0747	0.0753	1.00	0.103	pCi/L	07/07/17 08:06	07/31/17 06:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					07/07/17 08:06	07/31/17 06:09	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.248	U	0.194	0.195	1.00	0.307	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	108		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-8**  
**Date Collected: 06/28/17 12:40**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-5**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.112		0.0722	0.0729	1.00	0.0963	pCi/L	07/07/17 08:06	07/31/17 06:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					07/07/17 08:06	07/31/17 06:10	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.234	U	0.174	0.175	1.00	0.272	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	104		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: D-9**  
**Date Collected: 06/28/17 13:45**  
**Date Received: 06/30/17 09:30**

**Lab Sample ID: 480-120451-6**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0690	U	0.0683	0.0686	1.00	0.107	pCi/L	07/07/17 08:06	07/31/17 06:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					07/07/17 08:06	07/31/17 06:10	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.156	U	0.162	0.163	1.00	0.263	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	107		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-120451-7**

Date Collected: 06/28/17 16:00

Matrix: Water

Date Received: 06/30/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0658	U	0.0664	0.0667	1.00	0.104	pCi/L	07/07/17 08:06	07/31/17 06:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 08:06	07/31/17 06:10	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0290	U	0.134	0.134	1.00	0.238	pCi/L	07/07/17 08:43	07/19/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/07/17 08:43	07/19/17 14:25	1
Y Carrier	105		40 - 110					07/07/17 08:43	07/19/17 14:25	1

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y
480-120277-1	U-4S	96.2	
480-120277-1 DU	U-4S	96.5	
480-120277-2	U-4D	95.0	
480-120277-3	U-5S	100	
480-120277-4	U-5D	99.7	
480-120277-5	DUP-1	95.9	
480-120277-6	FIELD BLANK 1	101	
480-120371-1	D-1D	102	
480-120371-2	D-1S	101	
480-120371-3	D-3D	99.4	
480-120371-4	D-3S	103	
480-120371-5	D-5D	104	
480-120371-6	D-5S2	102	
480-120371-7	DUPLICATE-2	104	
480-120371-8	FIELD BLANK 2	105	
480-120451-1	D-2S	101	
480-120451-2	D-2D	87.6	
480-120451-3	D-4S	97.3	
480-120451-4	D-4D	96.8	
480-120451-5	D-8	98.5	
480-120451-6	D-9	93.5	
480-120451-7	EQUIPMENT BLANK	101	
LCS 160-316287/2-A	Lab Control Sample	95.3	
LCS 160-316545/2-A	Lab Control Sample	102	
LCS 160-316588/2-A	Lab Control Sample	98.5	
LCSD 160-316545/3-A	Lab Control Sample Dup	102	
MB 160-316287/1-A	Method Blank	97.3	
MB 160-316545/1-A	Method Blank	97.1	
MB 160-316588/1-A	Method Blank	104	

**Tracer/Carrier Legend**  
 Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
480-120277-1	U-4S	96.2	84.9
480-120277-1 DU	U-4S	96.5	81.5
480-120277-2	U-4D	95.0	84.9
480-120277-3	U-5S	100	87.1
480-120277-4	U-5D	99.7	83.4
480-120277-5	DUP-1	95.9	84.5
480-120277-6	FIELD BLANK 1	101	82.6
480-120371-1	D-1D	102	106
480-120371-2	D-1S	101	94.3
480-120371-3	D-3D	99.4	99.3

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-120371-4	D-3S	103	102
480-120371-5	D-5D	104	103
480-120371-6	D-5S2	102	107
480-120371-7	DUPLICATE-2	104	107
480-120371-8	FIELD BLANK 2	105	101
480-120451-1	D-2S	101	104
480-120451-2	D-2D	87.6	103
480-120451-3	D-4S	97.3	102
480-120451-4	D-4D	96.8	108
480-120451-5	D-8	98.5	104
480-120451-6	D-9	93.5	107
480-120451-7	EQUIPMENT BLANK	101	105
LCS 160-316293/2-A	Lab Control Sample	95.3	84.9
LCS 160-316555/2-A	Lab Control Sample	102	105
LCS 160-316590/2-A	Lab Control Sample	98.5	100
LCSD 160-316555/3-A	Lab Control Sample Dup	102	102
MB 160-316293/1-A	Method Blank	97.3	84.1
MB 160-316555/1-A	Method Blank	97.1	103
MB 160-316590/1-A	Method Blank	104	102

**Tracer/Carrier Legend**

Ba = Ba Carrier

Y = Y Carrier

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-316287/1-A**  
**Matrix: Water**  
**Analysis Batch: 319473**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316287**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01245	U	0.0409	0.0409	1.00	0.0794	pCi/L	07/05/17 10:51	07/27/17 05:58	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	97.3				07/05/17 10:51	07/27/17 05:58	1			

**Lab Sample ID: LCS 160-316287/2-A**  
**Matrix: Water**  
**Analysis Batch: 319473**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316287**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	10.28		1.06	1.00	0.0909	pCi/L	90	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	40 - 110						
Ba Carrier	95.3								

**Lab Sample ID: 480-120277-1 DU**  
**Matrix: Water**  
**Analysis Batch: 319473**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 316287**

Analyte	Sample Sample		DU DU		Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.112		0.08921	U	0.0657	1.00	0.0916	pCi/L	0.17	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	96.5									

**Lab Sample ID: MB 160-316545/1-A**  
**Matrix: Water**  
**Analysis Batch: 319923**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316545**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.02268	U	0.0377	0.0377	1.00	0.0669	pCi/L	07/07/17 08:06	07/31/17 06:05	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	97.1				07/07/17 08:06	07/31/17 06:05	1			

**Lab Sample ID: LCS 160-316545/2-A**  
**Matrix: Water**  
**Analysis Batch: 319923**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316545**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.891		1.02	1.00	0.0671	pCi/L	87	68 - 137

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Method: 903.0 - Radium-226 (GFPC) (Continued)

**Lab Sample ID:** LCS 160-316545/2-A  
**Matrix:** Water  
**Analysis Batch:** 319923

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 316545

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	102		40 - 110

**Lab Sample ID:** LCSD 160-316545/3-A  
**Matrix:** Water  
**Analysis Batch:** 319923

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA  
**Prep Batch:** 316545

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	8.499		0.894	1.00	0.0632	pCi/L	75	68 - 137	0.73	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	102		40 - 110

**Lab Sample ID:** MB 160-316588/1-A  
**Matrix:** Water  
**Analysis Batch:** 319921

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 316588

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03347	U	0.0379	0.0380	1.00	0.0592	pCi/L	07/07/17 12:29	07/31/17 05:52	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110	07/07/17 12:29	07/31/17 05:52	1

**Lab Sample ID:** LCS 160-316588/2-A  
**Matrix:** Water  
**Analysis Batch:** 319921

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 316588

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.116		0.950	1.00	0.0681	pCi/L	80	68 - 137

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		40 - 110

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID:** MB 160-316293/1-A  
**Matrix:** Water  
**Analysis Batch:** 317416

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 316293

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3203	U	0.223	0.225	1.00	0.346	pCi/L	07/05/17 12:26	07/14/17 14:25	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: MB 160-316293/1-A**  
**Matrix: Water**  
**Analysis Batch: 317416**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316293**

Carrier	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Ba Carrier	97.3		40 - 110	07/05/17 12:26	07/14/17 14:25	1
Y Carrier	84.1		40 - 110	07/05/17 12:26	07/14/17 14:25	1

**Lab Sample ID: LCS 160-316293/2-A**  
**Matrix: Water**  
**Analysis Batch: 317416**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316293**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	13.2	15.30		1.63	1.00	0.317	pCi/L	116	56 - 140	

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	95.3		40 - 110
Y Carrier	84.9		40 - 110

**Lab Sample ID: 480-120277-1 DU**  
**Matrix: Water**  
**Analysis Batch: 317416**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 316293**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.383		-0.06793	U	0.198	1.00	0.371	pCi/L	1.07	1

Carrier	DU DU		Limits
	%Yield	Qualifier	
Ba Carrier	96.5		40 - 110
Y Carrier	81.5		40 - 110

**Lab Sample ID: MB 160-316555/1-A**  
**Matrix: Water**  
**Analysis Batch: 318056**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316555**

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.03698	U	0.162	0.162	1.00	0.285	pCi/L	07/07/17 08:43	07/19/17 14:23	1

Carrier	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Ba Carrier	97.1		40 - 110	07/07/17 08:43	07/19/17 14:23	1
Y Carrier	103		40 - 110	07/07/17 08:43	07/19/17 14:23	1

**Lab Sample ID: LCS 160-316555/2-A**  
**Matrix: Water**  
**Analysis Batch: 318056**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316555**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	13.2	12.43		1.31	1.00	0.242	pCi/L	94	56 - 140	

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-316555/2-A**  
**Matrix: Water**  
**Analysis Batch: 318056**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316555**

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	102		40 - 110
Y Carrier	105		40 - 110

**Lab Sample ID: LCSD 160-316555/3-A**  
**Matrix: Water**  
**Analysis Batch: 318056**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 316555**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	13.2	12.84		1.35	1.00	0.273	pCi/L	98	56 - 140	0.15	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	102		40 - 110
Y Carrier	102		40 - 110

**Lab Sample ID: MB 160-316590/1-A**  
**Matrix: Water**  
**Analysis Batch: 317600**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 316590**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1359	U	0.161	0.162	1.00	0.311	pCi/L	07/07/17 13:12	07/17/17 15:05	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110	07/07/17 13:12	07/17/17 15:05	1
Y Carrier	102		40 - 110	07/07/17 13:12	07/17/17 15:05	1

**Lab Sample ID: LCS 160-316590/2-A**  
**Matrix: Water**  
**Analysis Batch: 317600**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 316590**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	13.2	11.83		1.27	1.00	0.303	pCi/L	90	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		40 - 110
Y Carrier	100		40 - 110

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Rad

### Prep Batch: 316287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	PrecSep-21	
480-120277-2	U-4D	Total/NA	Water	PrecSep-21	
480-120277-3	U-5S	Total/NA	Water	PrecSep-21	
480-120277-4	U-5D	Total/NA	Water	PrecSep-21	
480-120277-5	DUP-1	Total/NA	Water	PrecSep-21	
480-120277-6	FIELD BLANK 1	Total/NA	Water	PrecSep-21	
MB 160-316287/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-316287/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-120277-1 DU	U-4S	Total/NA	Water	PrecSep-21	

### Prep Batch: 316293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120277-1	U-4S	Total/NA	Water	PrecSep_0	
480-120277-2	U-4D	Total/NA	Water	PrecSep_0	
480-120277-3	U-5S	Total/NA	Water	PrecSep_0	
480-120277-4	U-5D	Total/NA	Water	PrecSep_0	
480-120277-5	DUP-1	Total/NA	Water	PrecSep_0	
480-120277-6	FIELD BLANK 1	Total/NA	Water	PrecSep_0	
MB 160-316293/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-316293/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-120277-1 DU	U-4S	Total/NA	Water	PrecSep_0	

### Prep Batch: 316545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	PrecSep-21	
480-120451-2	D-2D	Total/NA	Water	PrecSep-21	
480-120451-3	D-4S	Total/NA	Water	PrecSep-21	
480-120451-4	D-4D	Total/NA	Water	PrecSep-21	
480-120451-5	D-8	Total/NA	Water	PrecSep-21	
480-120451-6	D-9	Total/NA	Water	PrecSep-21	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	PrecSep-21	
MB 160-316545/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-316545/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-316545/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 316555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120451-1	D-2S	Total/NA	Water	PrecSep_0	
480-120451-2	D-2D	Total/NA	Water	PrecSep_0	
480-120451-3	D-4S	Total/NA	Water	PrecSep_0	
480-120451-4	D-4D	Total/NA	Water	PrecSep_0	
480-120451-5	D-8	Total/NA	Water	PrecSep_0	
480-120451-6	D-9	Total/NA	Water	PrecSep_0	
480-120451-7	EQUIPMENT BLANK	Total/NA	Water	PrecSep_0	
MB 160-316555/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-316555/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-316555/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

### Prep Batch: 316588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	PrecSep-21	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Rad (Continued)

### Prep Batch: 316588 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-2	D-1S	Total/NA	Water	PrecSep-21	
480-120371-3	D-3D	Total/NA	Water	PrecSep-21	
480-120371-4	D-3S	Total/NA	Water	PrecSep-21	
480-120371-5	D-5D	Total/NA	Water	PrecSep-21	
480-120371-6	D-5S2	Total/NA	Water	PrecSep-21	
480-120371-7	DUPLICATE-2	Total/NA	Water	PrecSep-21	
480-120371-8	FIELD BLANK 2	Total/NA	Water	PrecSep-21	
MB 160-316588/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-316588/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 316590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120371-1	D-1D	Total/NA	Water	PrecSep_0	
480-120371-2	D-1S	Total/NA	Water	PrecSep_0	
480-120371-3	D-3D	Total/NA	Water	PrecSep_0	
480-120371-4	D-3S	Total/NA	Water	PrecSep_0	
480-120371-5	D-5D	Total/NA	Water	PrecSep_0	
480-120371-6	D-5S2	Total/NA	Water	PrecSep_0	
480-120371-7	DUPLICATE-2	Total/NA	Water	PrecSep_0	
480-120371-8	FIELD BLANK 2	Total/NA	Water	PrecSep_0	
MB 160-316590/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-316590/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Client Sample ID: U-4S

**Lab Sample ID: 480-120277-1**

Date Collected: 06/26/17 11:40

Matrix: Water

Date Received: 06/28/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 05:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL
Total/NA	Analysis	904.0		1	317416	07/14/17 14:25	ALD	TAL SL

## Client Sample ID: U-4D

**Lab Sample ID: 480-120277-2**

Date Collected: 06/26/17 11:50

Matrix: Water

Date Received: 06/28/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 05:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL
Total/NA	Analysis	904.0		1	317416	07/14/17 14:25	ALD	TAL SL

## Client Sample ID: U-5S

**Lab Sample ID: 480-120277-3**

Date Collected: 06/26/17 13:45

Matrix: Water

Date Received: 06/28/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL
Total/NA	Analysis	904.0		1	317416	07/14/17 14:25	ALD	TAL SL

## Client Sample ID: U-5D

**Lab Sample ID: 480-120277-4**

Date Collected: 06/26/17 13:55

Matrix: Water

Date Received: 06/28/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL
Total/NA	Analysis	904.0		1	317416	07/14/17 14:25	ALD	TAL SL

## Client Sample ID: DUP-1

**Lab Sample ID: 480-120277-5**

Date Collected: 06/26/17 00:00

Matrix: Water

Date Received: 06/28/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Client Sample ID: DUP-1

Date Collected: 06/26/17 00:00  
Date Received: 06/28/17 09:45

## Lab Sample ID: 480-120277-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	317416	07/14/17 14:25	ALD	TAL SL

## Client Sample ID: FIELD BLANK 1

Date Collected: 06/26/17 15:20  
Date Received: 06/28/17 09:45

## Lab Sample ID: 480-120277-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316287	07/05/17 10:51	LDE	TAL SL
Total/NA	Analysis	903.0		1	319473	07/27/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316293	07/05/17 12:26	LDE	TAL SL
Total/NA	Analysis	904.0		1	317416	07/14/17 14:26	ALD	TAL SL

## Client Sample ID: D-1D

Date Collected: 06/27/17 14:30  
Date Received: 06/29/17 09:00

## Lab Sample ID: 480-120371-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: D-1S

Date Collected: 06/27/17 13:25  
Date Received: 06/29/17 09:00

## Lab Sample ID: 480-120371-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: D-3D

Date Collected: 06/27/17 10:30  
Date Received: 06/29/17 09:00

## Lab Sample ID: 480-120371-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Client Sample ID: D-3S

Lab Sample ID: 480-120371-4

Date Collected: 06/27/17 10:10

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: D-5D

Lab Sample ID: 480-120371-5

Date Collected: 06/27/17 08:30

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: D-5S2

Lab Sample ID: 480-120371-6

Date Collected: 06/27/17 07:40

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: DUPLICATE-2

Lab Sample ID: 480-120371-7

Date Collected: 06/27/17 00:00

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319921	07/31/17 05:55	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	317600	07/17/17 15:03	RTM	TAL SL

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-120371-8

Date Collected: 06/27/17 12:15

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316588	07/07/17 12:29	LDE	TAL SL
Total/NA	Analysis	903.0		1	319922	07/31/17 05:56	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316590	07/07/17 13:12	LDE	TAL SL

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-120371-8

Date Collected: 06/27/17 12:15

Matrix: Water

Date Received: 06/29/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	317599	07/17/17 15:00	RTM	TAL SL

## Client Sample ID: D-2S

Lab Sample ID: 480-120451-1

Date Collected: 06/28/17 09:05

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319923	07/31/17 06:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

## Client Sample ID: D-2D

Lab Sample ID: 480-120451-2

Date Collected: 06/28/17 09:25

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319923	07/31/17 06:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

## Client Sample ID: D-4S

Lab Sample ID: 480-120451-3

Date Collected: 06/28/17 11:10

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319924	07/31/17 06:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

## Client Sample ID: D-4D

Lab Sample ID: 480-120451-4

Date Collected: 06/28/17 11:35

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319924	07/31/17 06:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

## Client Sample ID: D-8

Lab Sample ID: 480-120451-5

Date Collected: 06/28/17 12:40

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319924	07/31/17 06:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

## Client Sample ID: D-9

Lab Sample ID: 480-120451-6

Date Collected: 06/28/17 13:45

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319924	07/31/17 06:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-120451-7

Date Collected: 06/28/17 16:00

Matrix: Water

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			316545	07/07/17 08:06	LDE	TAL SL
Total/NA	Analysis	903.0		1	319924	07/31/17 06:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			316555	07/07/17 08:43	LDE	TAL SL
Total/NA	Analysis	904.0		1	318056	07/19/17 14:25	RTM	TAL SL

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Accreditation/Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
 SDG: 120277

### Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-17 *
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17 *
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-16-10	07-31-17 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17 *
West Virginia DEP	State Program	3	381	08-31-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-120277-2  
SDG: 120277

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-120277-1	U-4S	Water	06/26/17 11:40	06/28/17 09:45
480-120277-2	U-4D	Water	06/26/17 11:50	06/28/17 09:45
480-120277-3	U-5S	Water	06/26/17 13:45	06/28/17 09:45
480-120277-4	U-5D	Water	06/26/17 13:55	06/28/17 09:45
480-120277-5	DUP-1	Water	06/26/17 00:00	06/28/17 09:45
480-120277-6	FIELD BLANK 1	Water	06/26/17 15:20	06/28/17 09:45
480-120371-1	D-1D	Water	06/27/17 14:30	06/29/17 09:00
480-120371-2	D-1S	Water	06/27/17 13:25	06/29/17 09:00
480-120371-3	D-3D	Water	06/27/17 10:30	06/29/17 09:00
480-120371-4	D-3S	Water	06/27/17 10:10	06/29/17 09:00
480-120371-5	D-5D	Water	06/27/17 08:30	06/29/17 09:00
480-120371-6	D-5S2	Water	06/27/17 07:40	06/29/17 09:00
480-120371-7	DUPLICATE-2	Water	06/27/17 00:00	06/29/17 09:00
480-120371-8	FIELD BLANK 2	Water	06/27/17 12:15	06/29/17 09:00
480-120451-1	D-2S	Water	06/28/17 09:05	06/30/17 09:30
480-120451-2	D-2D	Water	06/28/17 09:25	06/30/17 09:30
480-120451-3	D-4S	Water	06/28/17 11:10	06/30/17 09:30
480-120451-4	D-4D	Water	06/28/17 11:35	06/30/17 09:30
480-120451-5	D-8	Water	06/28/17 12:40	06/30/17 09:30
480-120451-6	D-9	Water	06/28/17 13:45	06/30/17 09:30
480-120451-7	EQUIPMENT BLANK	Water	06/28/17 16:00	06/30/17 09:30

<b>Regulatory Program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		<b>Project Manager:</b> Ryan Van Dette		<b>Site Contact:</b> Nathaniel Beineman		<b>Date:</b> 6/26/17		<b>COC No.:</b> 1 of 1 COCs	
<b>Client Contact</b> SKB Environmental 13425 Courthouse Blvd Rosemount, MN 55068 (651) 438-1500 Phone (651) 438-1549 FAX Project Name: RSMNT 2017 OCR GW Event 5 Site: P O # 3063-17-00813		<b>Tel/Fax:</b> Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS WORKING DAYS TAT if different from Below 2 weeks 1 week 2 days 1 day		<b>Lab Contact:</b>		<b>Carrier:</b>		<b>Sampler:</b> For Lab Use Walk-in Cite Lab Sampler Job / SDG N 480-120277 COC	
<b>Sample Identification</b> U-45 U-4D U-55 Duplicate #1 U-5D Field Blank		<b>Sample Date</b> 6/26/17 6/26/17 6/26/17 6/26/17 6/26/17 6/26/17	<b>Sample Time</b> 11:40 11:50 13:45 - 13:55 15:20	<b>Sample Type</b> (C=Comp, G=Grab) Grab Grab Grab Grab Grab Grab Grab Grab Grab Grab Grab Grab	<b>Matrix</b> Water Water Water Water Water Water Water Water Water Water Water Water	<b># of Cont.</b> 7 7 7 7 7 7 7 7 7 7 7 7	<input checked="" type="checkbox"/> Filtered Sample (Y/N) <input checked="" type="checkbox"/> Perform MS / MSD (Y/N) <input checked="" type="checkbox"/> Metals (totals) + Mercury <input checked="" type="checkbox"/> Radium 226 & 228 combined <input checked="" type="checkbox"/> pH <input checked="" type="checkbox"/> Sulfate <input checked="" type="checkbox"/> Chloride <input checked="" type="checkbox"/> Fluoride <input checked="" type="checkbox"/> TDS	<b>Sample Specific Notes:</b>	
<b>Preservation Used:</b> 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other									
<b>Possible Hazard Identification:</b> Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
<input type="checkbox"/> Non-hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab		<input type="checkbox"/> Archive for Months		<b>*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium</b>	
<b>Custody Seals Intact:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>Custody Seal No.:</b>		<b>Cooler Temp. (°C):</b> Obs'd: 31.0 Received by: JAB Date/Time: 6/27/17 7:00		<b>Company:</b> JAB Date/Time: 6-27-17 12:00		<b>Therm ID No.:</b>	
<b>Relinquished by:</b> MAM SMW		<b>Company:</b> JAB		<b>Received by:</b> JAB		<b>Company:</b> JAB		<b>Date/Time:</b> 6/27/17 07:45	
<b>Relinquished by:</b> JAB		<b>Company:</b> JAB		<b>Received in Laboratory by:</b> JAB		<b>Company:</b> JAB		<b>Date/Time:</b> 6/27/17 07:45	





**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CGR GW Event 5  
Site:  
P O # 3063-17-00813

**Project Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

**Site Contact: Nathaniel Beineman** Date: 6/7/17  
**Lab Contact:** Carrier:  
480-120371 COC  
Sampler:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analytical Parameters										Sample Specific Notes:
						Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS		
D-552	6/27/17	7:40	Grab	Water	7		X	X	X	X	X	X	X	X	X	
D-5D	6/27/17	8:30	Grab	Water	7		X	X	X	X	X	X	X	X	X	
D-3S	6/27/17	10:10	Grab	Water	7		X	X	X	X	X	X	X	X	X	
D-3D	6/27/17	10:30	Grab	Water	7		X	X	X	X	X	X	X	X	X	
Duplicate Z	6/27/17	-	Grab	Water	7		X	X	X	X	X	X	X	X	X	
Field Blank Z	6/27/17	12:15	Grab	Water	7		X	X	X	X	X	X	X	X	X	
D-1S	6/27/17	13:25	Grab	Water	7		X	X	X	X	X	X	X	X	X	
D-1D	6/27/17	14:30	Grab	Water	7		X	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Cooler Temp. (°C): Obs'd: 30, 20, 3.6°C  
Therm ID No.: #14

Received by: [Signature] Company: A  
Received by: [Signature] Company: A  
Received in Laboratory by: [Signature] Company: A

Date/Time: 6/28/17 9:00  
Date/Time: 6/29/17 0900  
Date/Time: 6/29/17 0900





<b>Client Contact</b> SKB Environmental 13425 Courthouse Blvd Rosemount, MN 55068 (651) 438-1500 Phone (651) 438-1549 FAX Project Name: RSMNT 2017 OCR GW Event 5 Site: P O # 3063-17-00813		<b>Project Manager: Ryan Van Dette</b> Regulatory Program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other: Site Contact: Nathaniel Beineman Lab Contact:		Date: 6/28/17 Carrier:		COC No: 1 of 1 COCs Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:												
<b>Analysis Turnaround Time</b> CALENDAR DAYS WORKING DAYS TAT if different from Below 2 weeks 1 week 2 days 1 day		Filtered Sample (Y / N) Perform MS / MSD (Y / N) Metals (total) + Mercury Radium 226 & 228 combined PH Sulfate Chloride Fluoride TDS		Date: 6/28/17 Carrier:		Sample Specific Notes: 480-120451 COC												
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Flammable	Non-Hazard	Skirt Irritant	Skirt Irritant	Flammable	Non-Hazard	Skirt Irritant	Skirt Irritant	Flammable	Non-Hazard	Skirt Irritant	Skirt Irritant	
D-25	6/28/17	9:05	Grab	Water	7													
D-2D	6/28/17	9:25	Grab	Water	7													
D-45	6/28/17	11:10	Grab	Water	7													
D-4D	6/28/17	11:35	Grab	Water	7													
D-8	6/28/17	12:40	Grab	Water	7													
D-9	6/28/17	13:45	Grab	Water	7													
Equipment Blank	6/28/17	16:00	Grab	Water	7													
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.																		
*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium																		
Custody Seal No.: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]																		
Received by: [Signature] Received by: [Signature] Received in Laboratory by: [Signature]																		
Date/Time: 6/28/17 7:00 Date/Time: 6/28/17 7:00 Date/Time: 6/28/17 0930																		
Company: GES Company: GES Company:																		
Cooler Temp (°C): Obs'd: Corrd: Return to Client: <input type="checkbox"/> Archive for: <input type="checkbox"/> Months																		
Therm ID No.: Date/Time: 6-29 7:00 Date/Time: 6/30/17 0930																		





# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T	Page 1 of 1									
Client Contact: Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	Job #: 480-120277-1									
Company: TestAmerica Laboratories, Inc.		Address: 13715 Rider Trail North, Earth City State, Zip: MO, 63045	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)									
Due Date Requested: 7/1/2017		Accreditations Required (See note): NELAP - Minnesota	Special Instructions/Note:									
TAT Requested (days):		Analysis Requested	Total Number of containers									
PO #:		Field Filtered Sample (Yes or No)	903.0/PreSep_21 Standard Target List									
WO #:		Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List									
Project #: 48013709		Field Filtered Sample (Yes or No)	903.0/PreSep_21 Standard Target List									
Site: Rosemount		Field Filtered Sample (Yes or No)	904.0/PreSep_0 Standard Target List									
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waterfall, BT=BIOSUB, AA=Air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List	Analysis Requested	Total Number of containers	Special Instructions/Note:
U-4S (480-120277-1)	6/26/17	11:40 Central		Water		X	X	X	X		3	
U-4D (480-120277-2)	6/26/17	11:50 Central		Water		X	X	X	X		3	
U-5S (480-120277-3)	6/26/17	13:45 Central		Water		X	X	X	X		3	
U-5D (480-120277-4)	6/26/17	13:55 Central		Water		X	X	X	X		3	
DUP-1 (480-120277-5)	6/26/17	Central		Water		X	X	X	X		3	
FIELD BLANK 1 (480-120277-6)	6/26/17	15:20 Central		Water		X	X	X	X		3	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>												
<p><b>Possible Hazard Identification</b>                  Unconfirmed                  Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2                  Empty Kit Relinquished by: _____ Date: _____                  Relinquished by: <i>[Signature]</i> Date/Time: 6/28/17 16:00 Company: TAB                  Relinquished by: _____ Date/Time: _____ Company: _____                  Relinquished by: _____ Date/Time: _____ Company: _____                  Custody Seals Intact: _____ Custody Seal No.: _____                  Δ Yes Δ No</p>												
<p><b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>                  Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months                  Special Instructions/QC Requirements: _____                  Method of Shipment: _____                  Received by: <i>[Signature]</i> Date/Time: 6-29-17 0920 Company: TAB                  Received by: _____ Date/Time: _____ Company: _____                  Received by: _____ Date/Time: _____ Company: _____                  Cooler Temperature(s) °C and Other Remarks: _____</p>												





**TestAmerica Buffalo**  
 10 Hazelwood Drive  
 Amherst, NY 14228-2298  
 Phone (716) 691-2600 Fax (716) 691-7991

## Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING



<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: VanDeite, Ryan T
Shipping/Receiving		Phone: E-Mail: ryan.vandette@testamericainc.com
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota
Address: 13715 Rider Trail North,		Chain of Custody: Minnesota
City: Earth City		
State, Zip: MO, 63045		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		
Email:		
Project Name: SKB Rosemount		
Project #: 48013709		
Site: Rosemount		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Solid, On-waste, etc.)	Preservation Code:	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		904.0/PreSep_0 Standard Target List		903.0/PreSep_21 Standard Target List		Total Number of Containers	Special Instructions/Note:
						Field Filtered	MS/MSD	Field Filtered	MS/MSD	Field Filtered	MS/MSD	Field Filtered	MS/MSD		
D-1D (480-120371-1)	6/27/17	14:30 Central	Water	Water		X	X	X	X	X	X	X	X	3	
D-1S (480-120371-2)	6/27/17	13:25 Central	Water	Water		X	X	X	X	X	X	X	X	3	
D-3D (480-120371-3)	6/27/17	10:30 Central	Water	Water		X	X	X	X	X	X	X	X	3	
D-3S (480-120371-4)	6/27/17	10:10 Central	Water	Water		X	X	X	X	X	X	X	X	3	
D-5D (480-120371-5)	6/28/17	08:30 Central	Water	Water		X	X	X	X	X	X	X	X	3	
D-5S2 (480-120371-6)	6/28/17	07:40 Central	Water	Water		X	X	X	X	X	X	X	X	3	
DUPLICATE-2 (480-120371-7)	6/28/17	Central	Water	Water		X	X	X	X	X	X	X	X	3	
FIELD BLANK 2 (480-120371-8)	6/28/17	12:15 Central	Water	Water		X	X	X	X	X	X	X	X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_

Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 6/29/17 1600 Company: TALS

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact:  Yes  No  Δ  Δ  No  
 Cooler Temperature(s) °C and Other Remarks:





# Chain of Custody Record



**Client Information (Sub Contract Lab)**  
 Client Contact: VanDette, Ryan T  
 Shipping/Receiving: ryan.vandette@testamericainc.com  
 Company: TestAmerica Laboratories, Inc.  
 Address: 13715 Rider Trail North, Minneapolis  
 City: Earth City  
 State, Zip: MO, 63045  
 Phone: 314-298-8566(Tel) 314-298-8757(Fax)  
 Email:  
 Project Name: SKB Rosemount  
 Site: Rosemount

Lab PM: VanDette, Ryan T  
 E-Mail: ryan.vandette@testamericainc.com  
 Accreditations Required (See note): NELAP - Minnesota  
 Job #: 480-120451-1  
 Page 1 of 1

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=Water, A=Air)	Field Filtered Sample (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List	Analysis Requested	Preservation Codes	Special Instructions/Note:
D-2S (480-120451-1)	6/28/17	09:05 Central	Water	Water	X	X			M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Z - other (specify)	
D-2D (480-120451-2)	6/28/17	09:25 Central	Water	Water	X	X				
D-4S (480-120451-3)	6/28/17	11:10 Central	Water	Water	X	X				
D-4D (480-120451-4)	6/28/17	11:35 Central	Water	Water	X	X				
D-8 (480-120451-5)	6/28/17	12:40 Central	Water	Water	X	X				
D-9 (480-120451-6)	6/28/17	13:45 Central	Water	Water	X	X				
EQUIPMENT BLANK (480-120451-7)	6/28/17	16:00 Central	Water	Water	X	X				

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=Water, A=Air)	Field Filtered Sample (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List	Analysis Requested	Preservation Codes	Special Instructions/Note:
D-2S (480-120451-1)	6/28/17	09:05 Central	Water	Water	X	X				
D-2D (480-120451-2)	6/28/17	09:25 Central	Water	Water	X	X				
D-4S (480-120451-3)	6/28/17	11:10 Central	Water	Water	X	X				
D-4D (480-120451-4)	6/28/17	11:35 Central	Water	Water	X	X				
D-8 (480-120451-5)	6/28/17	12:40 Central	Water	Water	X	X				
D-9 (480-120451-6)	6/28/17	13:45 Central	Water	Water	X	X				
EQUIPMENT BLANK (480-120451-7)	6/28/17	16:00 Central	Water	Water	X	X				

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>VanDette</i>	Date: 6/28/17	Time: 16:00	Method of Shipment:
Relinquished by: <i>VanDette</i>	Date: 7-1-17	Time: 08:10	Method of Shipment:
Relinquished by: <i>VanDette</i>	Date:	Time:	Method of Shipment:
Relinquished by: <i>VanDette</i>	Date:	Time:	Method of Shipment:

Custody Seal No.:  
 Δ Yes Δ No



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120277**

**List Number: 1**

**Creator: Conway, Curtis R**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120277**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 06/29/17 02:54 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120371**

**List Number: 1**

**Creator: Wallace, Cameron**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120371**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 06/30/17 02:22 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120451**

**List Number: 1**

**Creator: Janish, Carl M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-120277-2

SDG Number: 120277

**Login Number: 120451**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 07/01/17 10:40 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0,19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-121857-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

8/22/2017 10:05:24 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Job ID: 480-121857-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-121857-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 7/28/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 2.0° C, 2.6° C, 2.9° C, 3.5° C and 3.8° C.

#### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): FIELD BLANK 2 (480-121857-21). The container labels list D-7D, while the COC lists FIELD BLANK #2. Logged in as per the COC pending PM/client resolution.

#### HPLC/IC

Method(s) 300.0: The following sample was reported with elevated reporting limits for all analytes: D-1D (480-121857-1). The sample was analyzed at a dilution based on screening results.

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: D-1S (480-121857-2), D-2S (480-121857-3), D-2D (480-121857-4), D-4S (480-121857-5), D-4D (480-121857-6), D-8 (480-121857-7), D-9 (480-121857-8), U-4S (480-121857-9), U-4D (480-121857-10), U-5S (480-121857-11), U-5D (480-121857-12), D-5S2 (480-121857-13), D-5D (480-121857-14), D-3S (480-121857-15), D-3D (480-121857-16), DUP-1 (480-121857-18) and DUP-2 (480-121857-19). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Total Chromium results reported for the following sample do not concur with results previously reported for this site: D-9 (480-121857-8). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-1D (480-121857-1), D-1S (480-121857-2), D-2S (480-121857-3), D-2D (480-121857-4), D-4S (480-121857-5), D-4D (480-121857-6), D-8 (480-121857-7), D-9 (480-121857-8), U-4S (480-121857-9), U-4D (480-121857-10), U-5S (480-121857-11), U-5D (480-121857-12), D-5S2 (480-121857-13), D-5D (480-121857-14), D-3S (480-121857-15), D-3D (480-121857-16), EQUIPMENT BLANK (480-121857-17), DUP-1 (480-121857-18), DUP-2 (480-121857-19), FIELD BLANK 1 (480-121857-20) and FIELD BLANK 2 (480-121857-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: D-1D

## Lab Sample ID: 480-121857-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	90.8		0.50		mg/L	1		6010C	Total/NA
Chloride	42.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	414		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-121857-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.059		0.0020		mg/L	1		6010C	Total/NA
Boron	0.043		0.020		mg/L	1		6010C	Total/NA
Calcium	110		0.50		mg/L	1		6010C	Total/NA
Chloride	32.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	460		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-121857-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	99.0		0.50		mg/L	1		6010C	Total/NA
Chloride	45.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	29.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	437		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-121857-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	87.3		0.50		mg/L	1		6010C	Total/NA
Chloride	31.3		1.0		mg/L	2		300.0	Total/NA
Sulfate	24.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	390		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-121857-5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: D-4S (Continued)

## Lab Sample ID: 480-121857-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.067		0.0020		mg/L	1		6010C	Total/NA
Calcium	93.6		0.50		mg/L	1		6010C	Total/NA
Chloride	44.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	434		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-121857-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.060		0.0020		mg/L	1		6010C	Total/NA
Calcium	91.7		0.50		mg/L	1		6010C	Total/NA
Chloride	42.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	411		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-121857-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Calcium	67.2		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.66		0.30		ug/L	1		6020A	Total/NA
Chloride	17.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	36.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	323		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	8.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-121857-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.068		0.0020		mg/L	1		6010C	Total/NA
Calcium	95.3		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0096		0.0040		mg/L	1		6010C	Total/NA
Cobalt	1.2		0.30		ug/L	1		6020A	Total/NA
Chloride	42.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	453		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4S

## Lab Sample ID: 480-121857-9

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: U-4S (Continued)

## Lab Sample ID: 480-121857-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.044		0.0020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Chromium	0.028		0.0040		mg/L	1		6010C	Total/NA
Chloride	47.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	429		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-121857-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.041		0.0020		mg/L	1		6010C	Total/NA
Calcium	88.1		0.50		mg/L	1		6010C	Total/NA
Chloride	37.3		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.10		0.10		mg/L	2		300.0	Total/NA
Sulfate	28.5		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	399		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-121857-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.068		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	94.6		0.50		mg/L	1		6010C	Total/NA
Chloride	71.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	25.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	480		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-121857-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Calcium	87.9		0.50		mg/L	1		6010C	Total/NA
Chloride	27.3		1.0		mg/L	2		300.0	Total/NA
Sulfate	29.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	399		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-121857-13

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: D-5S2 (Continued)

## Lab Sample ID: 480-121857-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.073		0.0020		mg/L	1		6010C	Total/NA
Boron	0.053		0.020		mg/L	1		6010C	Total/NA
Calcium	119		0.50		mg/L	1		6010C	Total/NA
Chloride	51.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	46.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	525		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.6	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-121857-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Calcium	98.5		0.50		mg/L	1		6010C	Total/NA
Chloride	22.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	31.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	420		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-121857-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Boron	0.074		0.020		mg/L	1		6010C	Total/NA
Calcium	108		0.50		mg/L	1		6010C	Total/NA
Chloride	63.3		2.5		mg/L	5		300.0	Total/NA
Sulfate	46.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	475		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-121857-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	101		0.50		mg/L	1		6010C	Total/NA
Chloride	31.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	32.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	432		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-121857-17

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: EQUIPMENT BLANK (Continued)

Lab Sample ID: 480-121857-17

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-1

Lab Sample ID: 480-121857-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.068		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	94.3		0.50		mg/L	1		6010C	Total/NA
Chloride	73.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	25.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	486		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUP-2

Lab Sample ID: 480-121857-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	100		0.50		mg/L	1		6010C	Total/NA
Chloride	31.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	32.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	442		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-121857-20

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.2	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-121857-21

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-1D**  
**Date Collected: 07/25/17 15:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 02:22	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 02:22	1
<b>Calcium</b>	<b>90.8</b>		0.50		mg/L		08/01/17 08:45	08/02/17 02:22	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 02:22	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 02:22	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 02:22	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:41	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:41	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 08:32	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 02:41	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 02:41	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:41	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:41	1
Thallium	ND		0.20		ug/L		08/01/17 07:32	08/08/17 18:36	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 13:57	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>42.0</b>		1.0		mg/L			08/10/17 21:03	2
Fluoride	ND		0.10		mg/L			08/10/17 21:03	2
<b>Sulfate</b>	<b>28.7</b>		4.0		mg/L			08/10/17 21:03	2
<b>Total Dissolved Solids</b>	<b>414</b>		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			07/28/17 20:07	1
<b>Temperature</b>	<b>25.4</b>	<b>HF</b>	0.001		Degrees C			07/28/17 20:07	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-1S**  
**Date Collected: 07/25/17 14:25**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.059		0.0020		mg/L		08/01/17 08:45	08/02/17 02:25	1
Boron	0.043		0.020		mg/L		08/01/17 08:45	08/02/17 02:25	1
Calcium	110		0.50		mg/L		08/01/17 08:45	08/02/17 02:25	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 02:25	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 02:25	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 02:25	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:47	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:47	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 08:35	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 02:47	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 02:47	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:47	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:47	1
Thallium	ND		0.20		ug/L		08/01/17 07:32	08/08/17 18:41	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:05	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.2		1.0		mg/L			08/10/17 11:02	2
Fluoride	ND		0.10		mg/L			08/10/17 11:02	2
Sulfate	27.3		4.0		mg/L			08/10/17 11:02	2
Total Dissolved Solids	460		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			07/28/17 20:10	1
Temperature	25.4	HF	0.001		Degrees C			07/28/17 20:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-2S**  
**Date Collected: 07/26/17 08:20**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.049		0.0020		mg/L		08/01/17 08:45	08/02/17 02:53	1
Boron	0.023		0.020		mg/L		08/10/17 08:25	08/11/17 12:20	1
Calcium	99.0		0.50		mg/L		08/01/17 08:45	08/02/17 02:53	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 02:53	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 02:53	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 02:53	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:10	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:10	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 08:38	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:10	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 03:10	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:10	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:10	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:04	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.2		1.0		mg/L			08/10/17 11:11	2
Fluoride	ND		0.10		mg/L			08/10/17 11:11	2
Sulfate	29.3		4.0		mg/L			08/10/17 11:11	2
Total Dissolved Solids	437		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			07/28/17 18:51	1
Temperature	24.8	HF	0.001		Degrees C			07/28/17 18:51	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-2D**  
**Date Collected: 07/26/17 08:40**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 02:56	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 02:56	1
<b>Calcium</b>	<b>87.3</b>		0.50		mg/L		08/01/17 08:45	08/02/17 02:56	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 02:56	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 02:56	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 02:56	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:37	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:37	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 08:51	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:37	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 03:37	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:37	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:37	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:32	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>31.3</b>		1.0		mg/L			08/10/17 11:19	2
Fluoride	ND		0.10		mg/L			08/10/17 11:19	2
<b>Sulfate</b>	<b>24.7</b>		4.0		mg/L			08/10/17 11:19	2
<b>Total Dissolved Solids</b>	<b>390</b>		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 18:54	1
<b>Temperature</b>	<b>24.9</b>	<b>HF</b>	0.001		Degrees C			07/28/17 18:54	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-4S**  
**Date Collected: 07/26/17 09:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.067</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:00	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:00	1
<b>Calcium</b>	<b>93.6</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:00	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:00	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:00	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:00	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:43	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:43	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:02	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:43	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 03:43	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:43	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:43	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:37	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>44.0</b>		1.0		mg/L			08/10/17 11:27	2
Fluoride	ND		0.10		mg/L			08/10/17 11:27	2
<b>Sulfate</b>	<b>28.6</b>		4.0		mg/L			08/10/17 11:27	2
<b>Total Dissolved Solids</b>	<b>434</b>		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 18:57	1
<b>Temperature</b>	<b>25.0</b>	<b>HF</b>	0.001		Degrees C			07/28/17 18:57	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-4D**  
**Date Collected: 07/26/17 09:35**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.060</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:03	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:03	1
<b>Calcium</b>	<b>91.7</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:03	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:03	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:03	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:03	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:48	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:48	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:05	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:48	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 03:48	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:48	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:48	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:43	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:16	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>42.7</b>		1.0		mg/L			08/10/17 11:35	2
Fluoride	ND		0.10		mg/L			08/10/17 11:35	2
<b>Sulfate</b>	<b>27.2</b>		4.0		mg/L			08/10/17 11:35	2
<b>Total Dissolved Solids</b>	<b>411</b>		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 19:00	1
<b>Temperature</b>	<b>24.9</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:00	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-8**

**Date Collected: 07/26/17 09:55**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-7**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.050</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:07	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:07	1
<b>Calcium</b>	<b>67.2</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:07	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:07	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:07	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:07	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:54	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:54	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:08	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:54	1
<b>Cobalt</b>	<b>0.66</b>		0.30		ug/L		08/01/17 07:32	08/06/17 03:54	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:54	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:54	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:48	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>17.0</b>		1.0		mg/L			08/10/17 11:43	2
Fluoride	ND		0.10		mg/L			08/10/17 11:43	2
<b>Sulfate</b>	<b>36.1</b>		4.0		mg/L			08/10/17 11:43	2
<b>Total Dissolved Solids</b>	<b>323</b>		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>8.0</b>	<b>HF</b>	0.1		SU			07/28/17 19:02	1
<b>Temperature</b>	<b>25.1</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:02	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-9**

**Date Collected: 07/26/17 10:40**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-8**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.068</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:10	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:10	1
<b>Calcium</b>	<b>95.3</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:10	1
<b>Chromium</b>	<b>0.0096</b>		0.0040		mg/L		08/01/17 08:45	08/02/17 03:10	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:10	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:10	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:59	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:59	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:10	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 03:59	1
<b>Cobalt</b>	<b>1.2</b>		0.30		ug/L		08/01/17 07:32	08/06/17 03:59	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:59	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 03:59	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 19:54	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>42.4</b>		1.0		mg/L			08/10/17 12:24	2
Fluoride	ND		0.10		mg/L			08/10/17 12:24	2
<b>Sulfate</b>	<b>27.1</b>		4.0		mg/L			08/10/17 12:24	2
<b>Total Dissolved Solids</b>	<b>453</b>		10.0		mg/L			07/31/17 16:42	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			07/28/17 19:05	1
<b>Temperature</b>	<b>25.1</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-4S**  
**Date Collected: 07/25/17 09:20**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.044</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:24	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:24	1
<b>Calcium</b>	<b>101</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:24	1
<b>Chromium</b>	<b>0.028</b>		0.0040		mg/L		08/01/17 08:45	08/02/17 03:24	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:24	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:22	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:22	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:13	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:22	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:22	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:22	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:22	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:21	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>47.0</b>		1.0		mg/L			08/10/17 12:32	2
Fluoride	ND		0.10		mg/L			08/10/17 12:32	2
<b>Sulfate</b>	<b>27.4</b>		4.0		mg/L			08/10/17 12:32	2
<b>Total Dissolved Solids</b>	<b>429</b>		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			07/28/17 19:08	1
<b>Temperature</b>	<b>25.0</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:08	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-4D**  
**Date Collected: 07/25/17 09:30**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.041</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:28	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:28	1
<b>Calcium</b>	<b>88.1</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:28	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:28	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:28	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:28	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:28	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:28	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:15	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:28	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:28	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:28	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:28	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:22	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:22	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>37.3</b>		1.0		mg/L			08/10/17 12:40	2
<b>Fluoride</b>	<b>0.10</b>		0.10		mg/L			08/10/17 12:40	2
<b>Sulfate</b>	<b>28.5</b>		4.0		mg/L			08/10/17 12:40	2
<b>Total Dissolved Solids</b>	<b>399</b>		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 19:11	1
<b>Temperature</b>	<b>25.1</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:11	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-5S**  
**Date Collected: 07/25/17 10:25**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.068		0.0020		mg/L		08/01/17 08:45	08/02/17 03:31	1
Boron	0.020		0.020		mg/L		08/01/17 08:45	08/02/17 03:31	1
Calcium	94.6		0.50		mg/L		08/01/17 08:45	08/02/17 03:31	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:31	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:31	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:31	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:33	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:33	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:18	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:33	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:33	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:33	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:33	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:28	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:24	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71.4		2.5		mg/L			08/10/17 12:48	5
Fluoride	ND		0.25		mg/L			08/10/17 12:48	5
Sulfate	25.2		10.0		mg/L			08/10/17 12:48	5
Total Dissolved Solids	480		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			07/28/17 19:14	1
Temperature	24.8	HF	0.001		Degrees C			07/28/17 19:14	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-5D**  
**Date Collected: 07/25/17 10:35**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-12**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.057</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:35	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:35	1
<b>Calcium</b>	<b>87.9</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:35	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:35	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:35	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:35	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:39	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:39	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:21	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:39	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:39	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:39	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:39	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:33	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:26	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>27.3</b>		1.0		mg/L			08/10/17 12:56	2
Fluoride	ND		0.10		mg/L			08/10/17 12:56	2
<b>Sulfate</b>	<b>29.3</b>		4.0		mg/L			08/10/17 12:56	2
<b>Total Dissolved Solids</b>	<b>399</b>		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 19:16	1
<b>Temperature</b>	<b>24.7</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:16	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-5S2**  
**Date Collected: 07/25/17 11:30**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-13**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.073		0.0020		mg/L		08/01/17 08:45	08/02/17 03:38	1
Boron	0.053		0.020		mg/L		08/01/17 08:45	08/02/17 03:38	1
Calcium	119		0.50		mg/L		08/01/17 08:45	08/02/17 03:38	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:38	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:38	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:38	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:44	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:44	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:23	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:44	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:44	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:44	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:44	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:28	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	51.3		2.5		mg/L			08/10/17 13:05	5
Fluoride	ND		0.25		mg/L			08/10/17 13:05	5
Sulfate	46.2		10.0		mg/L			08/10/17 13:05	5
Total Dissolved Solids	525		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			07/28/17 19:22	1
Temperature	24.6	HF	0.001		Degrees C			07/28/17 19:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-5D**  
**Date Collected: 07/25/17 12:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.053</b>		0.0020		mg/L		08/01/17 08:45	08/02/17 03:42	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:42	1
<b>Calcium</b>	<b>98.5</b>		0.50		mg/L		08/01/17 08:45	08/02/17 03:42	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:42	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:42	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:42	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:50	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:50	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:26	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:50	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:50	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:50	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:50	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:44	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:30	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>22.2</b>		1.0		mg/L			08/10/17 13:13	2
Fluoride	ND		0.10		mg/L			08/10/17 13:13	2
<b>Sulfate</b>	<b>31.4</b>		4.0		mg/L			08/10/17 13:13	2
<b>Total Dissolved Solids</b>	<b>420</b>		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			07/28/17 19:28	1
<b>Temperature</b>	<b>24.5</b>	<b>HF</b>	0.001		Degrees C			07/28/17 19:28	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-3S**  
**Date Collected: 07/25/17 13:20**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-15**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		08/01/17 08:45	08/02/17 03:46	1
Boron	0.074		0.020		mg/L		08/01/17 08:45	08/02/17 03:46	1
Calcium	108		0.50		mg/L		08/01/17 08:45	08/02/17 03:46	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:46	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:46	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:46	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:55	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:55	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:37	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 04:55	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 04:55	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:55	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 04:55	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:50	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:31	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63.3		2.5		mg/L			08/10/17 13:21	5
Fluoride	ND		0.25		mg/L			08/10/17 13:21	5
Sulfate	46.7		10.0		mg/L			08/10/17 13:21	5
Total Dissolved Solids	475		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			07/28/17 19:30	1
Temperature	24.4	HF	0.001		Degrees C			07/28/17 19:30	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-3D**  
**Date Collected: 07/25/17 13:40**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-16**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		08/01/17 08:45	08/02/17 03:49	1
Boron	0.023		0.020		mg/L		08/01/17 08:45	08/02/17 03:49	1
Calcium	101		0.50		mg/L		08/01/17 08:45	08/02/17 03:49	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:49	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:49	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:49	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:01	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:01	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:40	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 05:01	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 05:01	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:01	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:01	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 20:55	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.8		1.0		mg/L			08/10/17 13:29	2
Fluoride	ND		0.10		mg/L			08/10/17 13:29	2
Sulfate	32.3		4.0		mg/L			08/10/17 13:29	2
Total Dissolved Solids	432		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			07/28/17 19:33	1
Temperature	24.5	HF	0.001		Degrees C			07/28/17 19:33	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-121857-17**

**Date Collected: 07/26/17 11:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/01/17 08:45	08/02/17 03:53	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 03:53	1
Calcium	ND		0.50		mg/L		08/01/17 08:45	08/02/17 03:53	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 03:53	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 03:53	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 03:53	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:06	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:06	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:43	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 05:06	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 05:06	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:06	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:06	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 21:01	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 14:18	1
Fluoride	ND		0.050		mg/L			08/10/17 14:18	1
Sulfate	ND		2.0		mg/L			08/10/17 14:18	1
Total Dissolved Solids	ND		10.0		mg/L			07/31/17 16:42	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.1	HF	0.1		SU			07/28/17 19:36	1
Temperature	24.5	HF	0.001		Degrees C			07/28/17 19:36	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: DUP-1**

**Date Collected: 07/25/17 00:00**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-18**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.068		0.0020		mg/L		08/01/17 08:45	08/02/17 04:07	1
Boron	0.020		0.020		mg/L		08/01/17 08:45	08/02/17 04:07	1
Calcium	94.3		0.50		mg/L		08/01/17 08:45	08/02/17 04:07	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 04:07	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 04:07	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 04:07	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:12	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:12	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:45	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 05:12	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 05:12	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:12	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:12	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 21:06	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:40	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73.4		2.5		mg/L			08/10/17 14:26	5
Fluoride	ND		0.25		mg/L			08/10/17 14:26	5
Sulfate	25.0		10.0		mg/L			08/10/17 14:26	5
Total Dissolved Solids	486		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			07/28/17 19:39	1
Temperature	24.7	HF	0.001		Degrees C			07/28/17 19:39	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: DUP-2**

**Date Collected: 07/25/17 00:00**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-19**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		08/01/17 08:45	08/02/17 04:10	1
Boron	0.022		0.020		mg/L		08/01/17 08:45	08/02/17 04:10	1
Calcium	100		0.50		mg/L		08/01/17 08:45	08/02/17 04:10	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 04:10	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 04:10	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 04:10	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:35	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:35	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:48	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 05:35	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 05:35	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:35	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:35	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 21:29	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:42	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.7		1.0		mg/L			08/10/17 14:34	2
Fluoride	ND		0.10		mg/L			08/10/17 14:34	2
Sulfate	32.2		4.0		mg/L			08/10/17 14:34	2
Total Dissolved Solids	442		10.0		mg/L			07/31/17 16:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			07/28/17 19:42	1
Temperature	24.8	HF	0.001		Degrees C			07/28/17 19:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-121857-20**

**Date Collected: 07/25/17 11:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/01/17 08:45	08/02/17 04:14	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 04:14	1
Calcium	ND		0.50		mg/L		08/01/17 08:45	08/02/17 04:14	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 04:14	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 04:14	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 04:14	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:40	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:40	1
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 09:50	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 05:40	1
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 05:40	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:40	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 05:40	1
Thallium	ND	^	0.20		ug/L		08/01/17 07:32	08/08/17 21:35	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:44	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 14:42	1
Fluoride	ND		0.050		mg/L			08/10/17 14:42	1
Sulfate	ND		2.0		mg/L			08/10/17 14:42	1
Total Dissolved Solids	ND		10.0		mg/L			07/31/17 16:56	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.2	HF	0.1		SU			07/28/17 19:44	1
Temperature	24.9	HF	0.001		Degrees C			07/28/17 19:44	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-121857-21**

**Date Collected: 07/25/17 14:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/01/17 08:10	08/02/17 09:23	1
Boron	ND		0.020		mg/L		08/01/17 08:10	08/02/17 09:23	1
Calcium	ND		0.50		mg/L		08/01/17 08:10	08/02/17 09:23	1
Chromium	ND		0.0040		mg/L		08/01/17 08:10	08/02/17 09:23	1
Lead	ND		0.010		mg/L		08/01/17 08:10	08/02/17 09:23	1
Lithium	ND		0.030		mg/L		08/01/17 08:10	08/02/17 09:23	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/03/17 09:10	08/11/17 00:26	1
Arsenic	ND		1.0		ug/L		08/03/17 09:10	08/11/17 00:26	1
Beryllium	ND		0.70		ug/L		08/03/17 09:10	08/18/17 09:59	1
Cadmium	ND		0.50		ug/L		08/03/17 09:10	08/11/17 00:26	1
Cobalt	ND		0.30		ug/L		08/03/17 09:10	08/11/17 00:26	1
Molybdenum	ND		1.0		ug/L		08/03/17 09:10	08/11/17 00:26	1
Selenium	ND		1.0		ug/L		08/03/17 09:10	08/18/17 09:59	1
Thallium	ND		0.20		ug/L		08/03/17 09:10	08/11/17 00:26	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:50	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 14:50	1
Fluoride	ND		0.050		mg/L			08/10/17 14:50	1
Sulfate	ND		2.0		mg/L			08/10/17 14:50	1
Total Dissolved Solids	ND		10.0		mg/L			07/31/17 16:56	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1		SU			07/28/17 19:47	1
Temperature	25.0	HF	0.001		Degrees C			07/28/17 19:47	1

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-369592/1-A**  
**Matrix: Water**  
**Analysis Batch: 370130**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369592**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/01/17 08:10	08/02/17 07:40	1
Boron	ND		0.020		mg/L		08/01/17 08:10	08/02/17 07:40	1
Calcium	ND		0.50		mg/L		08/01/17 08:10	08/02/17 07:40	1
Chromium	ND		0.0040		mg/L		08/01/17 08:10	08/02/17 07:40	1
Lead	ND		0.010		mg/L		08/01/17 08:10	08/02/17 07:40	1
Lithium	ND		0.030		mg/L		08/01/17 08:10	08/02/17 07:40	1

**Lab Sample ID: LCS 480-369592/2-A**  
**Matrix: Water**  
**Analysis Batch: 370130**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369592**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.209		mg/L		105	80 - 120
Boron	0.200	0.208		mg/L		104	80 - 120
Calcium	10.0	9.78		mg/L		98	80 - 120
Chromium	0.200	0.205		mg/L		103	80 - 120
Lead	0.200	0.203		mg/L		101	80 - 120

**Lab Sample ID: LCSD 480-369592/21-A**  
**Matrix: Water**  
**Analysis Batch: 370130**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 369592**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.200	0.205		mg/L		103	80 - 120	2	20
Boron	0.200	0.206		mg/L		103	80 - 120	1	20
Calcium	10.0	9.73		mg/L		97	80 - 120	0	20
Chromium	0.200	0.202		mg/L		101	80 - 120	1	20
Lead	0.200	0.202		mg/L		101	80 - 120	0	20

**Lab Sample ID: MB 480-369594/1-A**  
**Matrix: Water**  
**Analysis Batch: 370059**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369594**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/01/17 08:45	08/02/17 02:15	1
Boron	ND		0.020		mg/L		08/01/17 08:45	08/02/17 02:15	1
Calcium	ND		0.50		mg/L		08/01/17 08:45	08/02/17 02:15	1
Chromium	ND		0.0040		mg/L		08/01/17 08:45	08/02/17 02:15	1
Lead	ND		0.010		mg/L		08/01/17 08:45	08/02/17 02:15	1
Lithium	ND		0.030		mg/L		08/01/17 08:45	08/02/17 02:15	1

**Lab Sample ID: LCS 480-369594/2-A**  
**Matrix: Water**  
**Analysis Batch: 370059**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369594**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.205		mg/L		103	80 - 120
Boron	0.200	0.200		mg/L		100	80 - 120
Calcium	10.0	9.86		mg/L		99	80 - 120

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# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: LCS 480-369594/2-A**  
**Matrix: Water**  
**Analysis Batch: 370059**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369594**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chromium	0.200	0.200		mg/L		100	80 - 120
Lead	0.200	0.206		mg/L		103	80 - 120

**Lab Sample ID: 480-121857-2 MS**  
**Matrix: Water**  
**Analysis Batch: 370059**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 369594**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.059		0.200	0.260		mg/L		101	75 - 125
Boron	0.043		0.200	0.244		mg/L		101	75 - 125
Calcium	110		10.0	117.5	4	mg/L		76	75 - 125
Chromium	ND		0.200	0.202		mg/L		100	75 - 125
Lead	ND		0.200	0.210		mg/L		105	75 - 125

**Lab Sample ID: 480-121857-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 370059**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 369594**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.059		0.200	0.259		mg/L		100	75 - 125	0	20
Boron	0.043		0.200	0.245		mg/L		101	75 - 125	0	20
Calcium	110		10.0	117.3	4	mg/L		73	75 - 125	0	20
Chromium	ND		0.200	0.201		mg/L		99	75 - 125	0	20
Lead	ND		0.200	0.209		mg/L		105	75 - 125	0	20

**Lab Sample ID: MB 480-371313/1-A**  
**Matrix: Water**  
**Analysis Batch: 371843**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 371313**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020		mg/L		08/10/17 08:25	08/11/17 12:13	1

**Lab Sample ID: LCS 480-371313/2-A**  
**Matrix: Water**  
**Analysis Batch: 371843**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 371313**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.200	0.213		mg/L		107	80 - 120

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-369595/1-A**  
**Matrix: Water**  
**Analysis Batch: 370816**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:30	1
Arsenic	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:30	1
Cadmium	ND		0.50		ug/L		08/01/17 07:32	08/06/17 02:30	1

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 480-369595/1-A**  
**Matrix: Water**  
**Analysis Batch: 370816**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.30		ug/L		08/01/17 07:32	08/06/17 02:30	1
Molybdenum	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:30	1
Selenium	ND		1.0		ug/L		08/01/17 07:32	08/06/17 02:30	1

**Lab Sample ID: MB 480-369595/1-A**  
**Matrix: Water**  
**Analysis Batch: 371280**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	^	0.70		ug/L		08/01/17 07:32	08/08/17 18:25	1
Thallium	ND		0.20		ug/L		08/01/17 07:32	08/08/17 18:25	1

**Lab Sample ID: MB 480-369595/1-A**  
**Matrix: Water**  
**Analysis Batch: 373095**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.70		ug/L		08/01/17 07:32	08/20/17 08:27	1

**Lab Sample ID: LCS 480-369595/2-A**  
**Matrix: Water**  
**Analysis Batch: 370816**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.15		ug/L		96	80 - 120
Arsenic	20.0	19.44		ug/L		97	80 - 120
Cadmium	20.0	19.27		ug/L		96	80 - 120
Cobalt	20.0	19.58		ug/L		98	80 - 120
Molybdenum	20.0	20.53		ug/L		103	80 - 120
Selenium	20.0	18.63		ug/L		93	80 - 120

**Lab Sample ID: LCS 480-369595/2-A**  
**Matrix: Water**  
**Analysis Batch: 371280**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Thallium	20.0	21.23		ug/L		106	80 - 120

**Lab Sample ID: LCS 480-369595/2-A**  
**Matrix: Water**  
**Analysis Batch: 373095**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	22.05		ug/L		110	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-121857-3 MS**

**Matrix: Water**

**Analysis Batch: 370816**

**Client Sample ID: D-2S**

**Prep Type: Total/NA**

**Prep Batch: 369595**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Antimony	ND		20.0	20.08		ug/L		100	75 - 125	
Arsenic	ND		20.0	20.20		ug/L		101	75 - 125	
Cadmium	ND		20.0	18.52		ug/L		93	75 - 125	
Cobalt	ND		20.0	18.80		ug/L		93	75 - 125	
Molybdenum	ND		20.0	18.92		ug/L		94	75 - 125	
Selenium	ND		20.0	20.06		ug/L		95	75 - 125	

**Lab Sample ID: 480-121857-3 MS**

**Matrix: Water**

**Analysis Batch: 371280**

**Client Sample ID: D-2S**

**Prep Type: Total/NA**

**Prep Batch: 369595**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Antimony	ND		20.0	20.13		ug/L		101	75 - 125	
Arsenic	ND		20.0	20.75		ug/L		104	75 - 125	
Cadmium	ND		20.0	18.54		ug/L		92	75 - 125	
Cobalt	ND		20.0	19.67		ug/L		97	75 - 125	
Molybdenum	ND		20.0	20.15		ug/L		100	75 - 125	

**Lab Sample ID: 480-121857-3 MS**

**Matrix: Water**

**Analysis Batch: 373095**

**Client Sample ID: D-2S**

**Prep Type: Total/NA**

**Prep Batch: 369595**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Beryllium	ND		20.0	21.22		ug/L		106	75 - 125	

**Lab Sample ID: 480-121857-3 MSD**

**Matrix: Water**

**Analysis Batch: 370816**

**Client Sample ID: D-2S**

**Prep Type: Total/NA**

**Prep Batch: 369595**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.	Limits	RPD	
	Result	Qualifier		Result	Qualifier						RPD	Limit
Antimony	ND		20.0	19.43		ug/L		97	75 - 125	3	20	
Arsenic	ND		20.0	20.02		ug/L		100	75 - 125	1	20	
Cadmium	ND		20.0	17.98		ug/L		90	75 - 125	3	20	
Cobalt	ND		20.0	18.10		ug/L		90	75 - 125	4	20	
Molybdenum	ND		20.0	19.61		ug/L		97	75 - 125	4	20	
Selenium	ND		20.0	19.92		ug/L		95	75 - 125	1	20	

**Lab Sample ID: 480-121857-3 MSD**

**Matrix: Water**

**Analysis Batch: 371280**

**Client Sample ID: D-2S**

**Prep Type: Total/NA**

**Prep Batch: 369595**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.	Limits	RPD	
	Result	Qualifier		Result	Qualifier						RPD	Limit
Antimony	ND		20.0	19.52		ug/L		98	75 - 125	3	20	
Arsenic	ND		20.0	20.32		ug/L		102	75 - 125	2	20	
Cadmium	ND		20.0	18.15		ug/L		90	75 - 125	2	20	
Cobalt	ND		20.0	19.13		ug/L		94	75 - 125	3	20	
Molybdenum	ND		20.0	19.12		ug/L		95	75 - 125	5	20	

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-121857-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 373095**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**  
**Prep Batch: 369595**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		20.0	21.88		ug/L		109	75 - 125	3	20

**Lab Sample ID: MB 480-370256/1-A**  
**Matrix: Water**  
**Analysis Batch: 371738**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 370256**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/03/17 09:10	08/10/17 22:06	1
Arsenic	ND		1.0		ug/L		08/03/17 09:10	08/10/17 22:06	1
Cadmium	ND		0.50		ug/L		08/03/17 09:10	08/10/17 22:06	1
Cobalt	ND		0.30		ug/L		08/03/17 09:10	08/10/17 22:06	1
Molybdenum	ND		1.0		ug/L		08/03/17 09:10	08/10/17 22:06	1
Thallium	ND		0.20		ug/L		08/03/17 09:10	08/10/17 22:06	1

**Lab Sample ID: MB 480-370256/1-A**  
**Matrix: Water**  
**Analysis Batch: 372855**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 370256**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.70		ug/L		08/03/17 09:10	08/18/17 07:56	1
Selenium	ND		1.0		ug/L		08/03/17 09:10	08/18/17 07:56	1

**Lab Sample ID: LCS 480-370256/2-A**  
**Matrix: Water**  
**Analysis Batch: 371738**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 370256**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	20.0	19.15		ug/L		96	80 - 120
Arsenic	20.0	18.93		ug/L		95	80 - 120
Cadmium	20.0	19.28		ug/L		96	80 - 120
Cobalt	20.0	19.50		ug/L		97	80 - 120
Molybdenum	20.0	20.24		ug/L		101	80 - 120
Thallium	20.0	19.91		ug/L		100	80 - 120

**Lab Sample ID: LCS 480-370256/2-A**  
**Matrix: Water**  
**Analysis Batch: 372855**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 370256**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	20.0	21.26		ug/L		106	80 - 120
Selenium	20.0	19.52		ug/L		98	80 - 120

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-369512/1-A**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369512**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 13:53	1

**Lab Sample ID: LCS 480-369512/2-A**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369512**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.52		ug/L		98	80 - 120

**Lab Sample ID: 480-121857-1 MS**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**  
**Prep Batch: 369512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.57		ug/L		98	80 - 120

**Lab Sample ID: 480-121857-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**  
**Prep Batch: 369512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	6.55		ug/L		98	80 - 120	0	20

**Lab Sample ID: MB 480-369513/1-A**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 369513**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		07/31/17 10:40	07/31/17 14:46	1

**Lab Sample ID: LCS 480-369513/2-A**  
**Matrix: Water**  
**Analysis Batch: 369699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 369513**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.48		ug/L		97	80 - 120

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-371460/28**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 14:10	1
Fluoride	ND		0.050		mg/L			08/10/17 14:10	1
Sulfate	ND		2.0		mg/L			08/10/17 14:10	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 480-371460/4**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 10:54	1
Fluoride	ND		0.050		mg/L			08/10/17 10:54	1
Sulfate	ND		2.0		mg/L			08/10/17 10:54	1

**Lab Sample ID: LCS 480-371460/27**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	48.01		mg/L		96	90 - 110
Fluoride	5.00	4.96		mg/L		99	90 - 110
Sulfate	50.0	49.41		mg/L		99	90 - 110

**Lab Sample ID: LCS 480-371460/3**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	48.37		mg/L		97	90 - 110
Fluoride	5.00	4.94		mg/L		99	90 - 110
Sulfate	50.0	49.50		mg/L		99	90 - 110

**Lab Sample ID: 480-121857-7 MS**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	17.0		100	114.0		mg/L		97	81 - 120
Fluoride	ND		10.0	9.97		mg/L		99	82 - 120
Sulfate	36.1		100	135.1		mg/L		99	80 - 120

**Lab Sample ID: 480-121857-7 MSD**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	17.0		100	114.9		mg/L		98	81 - 120	1	20
Fluoride	ND		10.0	10.07		mg/L		100	82 - 120	1	20
Sulfate	36.1		100	136.1		mg/L		100	80 - 120	1	20

**Lab Sample ID: 480-121857-16 MS**  
**Matrix: Water**  
**Analysis Batch: 371460**

**Client Sample ID: D-3D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	31.8		100	127.0		mg/L		95	81 - 120
Fluoride	ND		10.0	9.99		mg/L		99	82 - 120
Sulfate	32.3		100	130.9		mg/L		99	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 480-371464/28**  
**Matrix: Water**  
**Analysis Batch: 371464**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/10/17 16:26	1
Fluoride	ND		0.050		mg/L			08/10/17 16:26	1
Sulfate	ND		2.0		mg/L			08/10/17 16:26	1

**Lab Sample ID: LCS 480-371464/27**  
**Matrix: Water**  
**Analysis Batch: 371464**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.94		mg/L		104	90 - 110
Fluoride	5.00	5.26		mg/L		105	90 - 110
Sulfate	50.0	51.21		mg/L		102	90 - 110

**Lab Sample ID: 480-121857-1 MS**  
**Matrix: Water**  
**Analysis Batch: 371464**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	42.0		100	143.9		mg/L		102	81 - 120
Fluoride	ND		10.0	10.61		mg/L		105	82 - 120
Sulfate	28.7		100	129.7		mg/L		101	80 - 120

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-369686/1**  
**Matrix: Water**  
**Analysis Batch: 369686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			07/31/17 16:42	1

**Lab Sample ID: LCS 480-369686/2**  
**Matrix: Water**  
**Analysis Batch: 369686**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	508	498.0		mg/L		98	85 - 115

**Lab Sample ID: 480-121857-3 DU**  
**Matrix: Water**  
**Analysis Batch: 369686**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	437		432.0		mg/L		1	10

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: MB 480-369688/1**  
**Matrix: Water**  
**Analysis Batch: 369688**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			07/31/17 16:56	1

**Lab Sample ID: LCS 480-369688/2**  
**Matrix: Water**  
**Analysis Batch: 369688**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	508	468.0		mg/L		92	85 - 115

**Lab Sample ID: 480-121857-1 DU**  
**Matrix: Water**  
**Analysis Batch: 369688**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	414		408.0		mg/L		1	10

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-369394/1**  
**Matrix: Water**  
**Analysis Batch: 369394**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-369394/23**  
**Matrix: Water**  
**Analysis Batch: 369394**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: 480-121857-13 DU**  
**Matrix: Water**  
**Analysis Batch: 369394**

**Client Sample ID: D-5S2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	HF	7.6		SU		0.1	5
Temperature	24.6	HF	24.5		Degrees C		0.1	10



# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals

### Prep Batch: 369512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	7470A	
480-121857-2	D-1S	Total/NA	Water	7470A	
480-121857-3	D-2S	Total/NA	Water	7470A	
480-121857-4	D-2D	Total/NA	Water	7470A	
480-121857-5	D-4S	Total/NA	Water	7470A	
480-121857-6	D-4D	Total/NA	Water	7470A	
480-121857-7	D-8	Total/NA	Water	7470A	
480-121857-8	D-9	Total/NA	Water	7470A	
480-121857-9	U-4S	Total/NA	Water	7470A	
480-121857-10	U-4D	Total/NA	Water	7470A	
480-121857-11	U-5S	Total/NA	Water	7470A	
480-121857-12	U-5D	Total/NA	Water	7470A	
480-121857-13	D-5S2	Total/NA	Water	7470A	
480-121857-14	D-5D	Total/NA	Water	7470A	
480-121857-15	D-3S	Total/NA	Water	7470A	
480-121857-16	D-3D	Total/NA	Water	7470A	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	7470A	
480-121857-18	DUP-1	Total/NA	Water	7470A	
480-121857-19	DUP-2	Total/NA	Water	7470A	
480-121857-20	FIELD BLANK 1	Total/NA	Water	7470A	
MB 480-369512/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-369512/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-121857-1 MS	D-1D	Total/NA	Water	7470A	
480-121857-1 MSD	D-1D	Total/NA	Water	7470A	

### Prep Batch: 369513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	7470A	
MB 480-369513/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-369513/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 369592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	3005A	
MB 480-369592/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-369592/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-369592/21-A	Lab Control Sample Dup	Total/NA	Water	3005A	

### Prep Batch: 369594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	3005A	
480-121857-2	D-1S	Total/NA	Water	3005A	
480-121857-3	D-2S	Total/NA	Water	3005A	
480-121857-4	D-2D	Total/NA	Water	3005A	
480-121857-5	D-4S	Total/NA	Water	3005A	
480-121857-6	D-4D	Total/NA	Water	3005A	
480-121857-7	D-8	Total/NA	Water	3005A	
480-121857-8	D-9	Total/NA	Water	3005A	
480-121857-9	U-4S	Total/NA	Water	3005A	
480-121857-10	U-4D	Total/NA	Water	3005A	
480-121857-11	U-5S	Total/NA	Water	3005A	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals (Continued)

### Prep Batch: 369594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-12	U-5D	Total/NA	Water	3005A	
480-121857-13	D-5S2	Total/NA	Water	3005A	
480-121857-14	D-5D	Total/NA	Water	3005A	
480-121857-15	D-3S	Total/NA	Water	3005A	
480-121857-16	D-3D	Total/NA	Water	3005A	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	3005A	
480-121857-18	DUP-1	Total/NA	Water	3005A	
480-121857-19	DUP-2	Total/NA	Water	3005A	
480-121857-20	FIELD BLANK 1	Total/NA	Water	3005A	
MB 480-369594/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-369594/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-121857-2 MS	D-1S	Total/NA	Water	3005A	
480-121857-2 MSD	D-1S	Total/NA	Water	3005A	

### Prep Batch: 369595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	3020A	
480-121857-2	D-1S	Total/NA	Water	3020A	
480-121857-3	D-2S	Total/NA	Water	3020A	
480-121857-4	D-2D	Total/NA	Water	3020A	
480-121857-5	D-4S	Total/NA	Water	3020A	
480-121857-6	D-4D	Total/NA	Water	3020A	
480-121857-7	D-8	Total/NA	Water	3020A	
480-121857-8	D-9	Total/NA	Water	3020A	
480-121857-9	U-4S	Total/NA	Water	3020A	
480-121857-10	U-4D	Total/NA	Water	3020A	
480-121857-11	U-5S	Total/NA	Water	3020A	
480-121857-12	U-5D	Total/NA	Water	3020A	
480-121857-13	D-5S2	Total/NA	Water	3020A	
480-121857-14	D-5D	Total/NA	Water	3020A	
480-121857-15	D-3S	Total/NA	Water	3020A	
480-121857-16	D-3D	Total/NA	Water	3020A	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	3020A	
480-121857-18	DUP-1	Total/NA	Water	3020A	
480-121857-19	DUP-2	Total/NA	Water	3020A	
480-121857-20	FIELD BLANK 1	Total/NA	Water	3020A	
MB 480-369595/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-369595/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-121857-3 MS	D-2S	Total/NA	Water	3020A	
480-121857-3 MSD	D-2S	Total/NA	Water	3020A	

### Analysis Batch: 369699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	7470A	369512
480-121857-2	D-1S	Total/NA	Water	7470A	369512
480-121857-3	D-2S	Total/NA	Water	7470A	369512
480-121857-4	D-2D	Total/NA	Water	7470A	369512
480-121857-5	D-4S	Total/NA	Water	7470A	369512
480-121857-6	D-4D	Total/NA	Water	7470A	369512
480-121857-7	D-8	Total/NA	Water	7470A	369512
480-121857-8	D-9	Total/NA	Water	7470A	369512

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals (Continued)

### Analysis Batch: 369699 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-9	U-4S	Total/NA	Water	7470A	369512
480-121857-10	U-4D	Total/NA	Water	7470A	369512
480-121857-11	U-5S	Total/NA	Water	7470A	369512
480-121857-12	U-5D	Total/NA	Water	7470A	369512
480-121857-13	D-5S2	Total/NA	Water	7470A	369512
480-121857-14	D-5D	Total/NA	Water	7470A	369512
480-121857-15	D-3S	Total/NA	Water	7470A	369512
480-121857-16	D-3D	Total/NA	Water	7470A	369512
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	7470A	369512
480-121857-18	DUP-1	Total/NA	Water	7470A	369512
480-121857-19	DUP-2	Total/NA	Water	7470A	369512
480-121857-20	FIELD BLANK 1	Total/NA	Water	7470A	369512
480-121857-21	FIELD BLANK 2	Total/NA	Water	7470A	369513
MB 480-369512/1-A	Method Blank	Total/NA	Water	7470A	369512
MB 480-369513/1-A	Method Blank	Total/NA	Water	7470A	369513
LCS 480-369512/2-A	Lab Control Sample	Total/NA	Water	7470A	369512
LCS 480-369513/2-A	Lab Control Sample	Total/NA	Water	7470A	369513
480-121857-1 MS	D-1D	Total/NA	Water	7470A	369512
480-121857-1 MSD	D-1D	Total/NA	Water	7470A	369512

### Analysis Batch: 370059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	6010C	369594
480-121857-2	D-1S	Total/NA	Water	6010C	369594
480-121857-3	D-2S	Total/NA	Water	6010C	369594
480-121857-4	D-2D	Total/NA	Water	6010C	369594
480-121857-5	D-4S	Total/NA	Water	6010C	369594
480-121857-6	D-4D	Total/NA	Water	6010C	369594
480-121857-7	D-8	Total/NA	Water	6010C	369594
480-121857-8	D-9	Total/NA	Water	6010C	369594
480-121857-9	U-4S	Total/NA	Water	6010C	369594
480-121857-10	U-4D	Total/NA	Water	6010C	369594
480-121857-11	U-5S	Total/NA	Water	6010C	369594
480-121857-12	U-5D	Total/NA	Water	6010C	369594
480-121857-13	D-5S2	Total/NA	Water	6010C	369594
480-121857-14	D-5D	Total/NA	Water	6010C	369594
480-121857-15	D-3S	Total/NA	Water	6010C	369594
480-121857-16	D-3D	Total/NA	Water	6010C	369594
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	6010C	369594
480-121857-18	DUP-1	Total/NA	Water	6010C	369594
480-121857-19	DUP-2	Total/NA	Water	6010C	369594
480-121857-20	FIELD BLANK 1	Total/NA	Water	6010C	369594
MB 480-369594/1-A	Method Blank	Total/NA	Water	6010C	369594
LCS 480-369594/2-A	Lab Control Sample	Total/NA	Water	6010C	369594
480-121857-2 MS	D-1S	Total/NA	Water	6010C	369594
480-121857-2 MSD	D-1S	Total/NA	Water	6010C	369594

### Analysis Batch: 370130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	6010C	369592
MB 480-369592/1-A	Method Blank	Total/NA	Water	6010C	369592

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals (Continued)

### Analysis Batch: 370130 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-369592/2-A	Lab Control Sample	Total/NA	Water	6010C	369592
LCSD 480-369592/21-A	Lab Control Sample Dup	Total/NA	Water	6010C	369592

### Prep Batch: 370256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	3020A	
MB 480-370256/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-370256/2-A	Lab Control Sample	Total/NA	Water	3020A	

### Analysis Batch: 370816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	6020A	369595
480-121857-2	D-1S	Total/NA	Water	6020A	369595
480-121857-3	D-2S	Total/NA	Water	6020A	369595
480-121857-4	D-2D	Total/NA	Water	6020A	369595
480-121857-5	D-4S	Total/NA	Water	6020A	369595
480-121857-6	D-4D	Total/NA	Water	6020A	369595
480-121857-7	D-8	Total/NA	Water	6020A	369595
480-121857-8	D-9	Total/NA	Water	6020A	369595
480-121857-9	U-4S	Total/NA	Water	6020A	369595
480-121857-10	U-4D	Total/NA	Water	6020A	369595
480-121857-11	U-5S	Total/NA	Water	6020A	369595
480-121857-12	U-5D	Total/NA	Water	6020A	369595
480-121857-13	D-5S2	Total/NA	Water	6020A	369595
480-121857-14	D-5D	Total/NA	Water	6020A	369595
480-121857-15	D-3S	Total/NA	Water	6020A	369595
480-121857-16	D-3D	Total/NA	Water	6020A	369595
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	6020A	369595
480-121857-18	DUP-1	Total/NA	Water	6020A	369595
480-121857-19	DUP-2	Total/NA	Water	6020A	369595
480-121857-20	FIELD BLANK 1	Total/NA	Water	6020A	369595
MB 480-369595/1-A	Method Blank	Total/NA	Water	6020A	369595
LCS 480-369595/2-A	Lab Control Sample	Total/NA	Water	6020A	369595
480-121857-3 MS	D-2S	Total/NA	Water	6020A	369595
480-121857-3 MSD	D-2S	Total/NA	Water	6020A	369595

### Analysis Batch: 371280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	6020A	369595
480-121857-2	D-1S	Total/NA	Water	6020A	369595
480-121857-3	D-2S	Total/NA	Water	6020A	369595
480-121857-4	D-2D	Total/NA	Water	6020A	369595
480-121857-5	D-4S	Total/NA	Water	6020A	369595
480-121857-6	D-4D	Total/NA	Water	6020A	369595
480-121857-7	D-8	Total/NA	Water	6020A	369595
480-121857-8	D-9	Total/NA	Water	6020A	369595
480-121857-9	U-4S	Total/NA	Water	6020A	369595
480-121857-10	U-4D	Total/NA	Water	6020A	369595
480-121857-11	U-5S	Total/NA	Water	6020A	369595
480-121857-12	U-5D	Total/NA	Water	6020A	369595
480-121857-13	D-5S2	Total/NA	Water	6020A	369595

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals (Continued)

### Analysis Batch: 371280 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-14	D-5D	Total/NA	Water	6020A	369595
480-121857-15	D-3S	Total/NA	Water	6020A	369595
480-121857-16	D-3D	Total/NA	Water	6020A	369595
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	6020A	369595
480-121857-18	DUP-1	Total/NA	Water	6020A	369595
480-121857-19	DUP-2	Total/NA	Water	6020A	369595
480-121857-20	FIELD BLANK 1	Total/NA	Water	6020A	369595
MB 480-369595/1-A	Method Blank	Total/NA	Water	6020A	369595
LCS 480-369595/2-A	Lab Control Sample	Total/NA	Water	6020A	369595
480-121857-3 MS	D-2S	Total/NA	Water	6020A	369595
480-121857-3 MSD	D-2S	Total/NA	Water	6020A	369595

### Prep Batch: 371313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-3	D-2S	Total/NA	Water	3005A	
MB 480-371313/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-371313/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 371738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	6020A	370256
MB 480-370256/1-A	Method Blank	Total/NA	Water	6020A	370256
LCS 480-370256/2-A	Lab Control Sample	Total/NA	Water	6020A	370256

### Analysis Batch: 371843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-3	D-2S	Total/NA	Water	6010C	371313
MB 480-371313/1-A	Method Blank	Total/NA	Water	6010C	371313
LCS 480-371313/2-A	Lab Control Sample	Total/NA	Water	6010C	371313

### Analysis Batch: 372855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	6020A	370256
MB 480-370256/1-A	Method Blank	Total/NA	Water	6020A	370256
LCS 480-370256/2-A	Lab Control Sample	Total/NA	Water	6020A	370256

### Analysis Batch: 373095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	6020A	369595
480-121857-2	D-1S	Total/NA	Water	6020A	369595
480-121857-3	D-2S	Total/NA	Water	6020A	369595
480-121857-4	D-2D	Total/NA	Water	6020A	369595
480-121857-5	D-4S	Total/NA	Water	6020A	369595
480-121857-6	D-4D	Total/NA	Water	6020A	369595
480-121857-7	D-8	Total/NA	Water	6020A	369595
480-121857-8	D-9	Total/NA	Water	6020A	369595
480-121857-9	U-4S	Total/NA	Water	6020A	369595
480-121857-10	U-4D	Total/NA	Water	6020A	369595
480-121857-11	U-5S	Total/NA	Water	6020A	369595
480-121857-12	U-5D	Total/NA	Water	6020A	369595
480-121857-13	D-5S2	Total/NA	Water	6020A	369595

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Metals (Continued)

### Analysis Batch: 373095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-14	D-5D	Total/NA	Water	6020A	369595
480-121857-15	D-3S	Total/NA	Water	6020A	369595
480-121857-16	D-3D	Total/NA	Water	6020A	369595
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	6020A	369595
480-121857-18	DUP-1	Total/NA	Water	6020A	369595
480-121857-19	DUP-2	Total/NA	Water	6020A	369595
480-121857-20	FIELD BLANK 1	Total/NA	Water	6020A	369595
MB 480-369595/1-A	Method Blank	Total/NA	Water	6020A	369595
LCS 480-369595/2-A	Lab Control Sample	Total/NA	Water	6020A	369595
480-121857-3 MS	D-2S	Total/NA	Water	6020A	369595
480-121857-3 MSD	D-2S	Total/NA	Water	6020A	369595

## General Chemistry

### Analysis Batch: 369394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	SM 4500 H+ B	
480-121857-2	D-1S	Total/NA	Water	SM 4500 H+ B	
480-121857-3	D-2S	Total/NA	Water	SM 4500 H+ B	
480-121857-4	D-2D	Total/NA	Water	SM 4500 H+ B	
480-121857-5	D-4S	Total/NA	Water	SM 4500 H+ B	
480-121857-6	D-4D	Total/NA	Water	SM 4500 H+ B	
480-121857-7	D-8	Total/NA	Water	SM 4500 H+ B	
480-121857-8	D-9	Total/NA	Water	SM 4500 H+ B	
480-121857-9	U-4S	Total/NA	Water	SM 4500 H+ B	
480-121857-10	U-4D	Total/NA	Water	SM 4500 H+ B	
480-121857-11	U-5S	Total/NA	Water	SM 4500 H+ B	
480-121857-12	U-5D	Total/NA	Water	SM 4500 H+ B	
480-121857-13	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-121857-14	D-5D	Total/NA	Water	SM 4500 H+ B	
480-121857-15	D-3S	Total/NA	Water	SM 4500 H+ B	
480-121857-16	D-3D	Total/NA	Water	SM 4500 H+ B	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
480-121857-18	DUP-1	Total/NA	Water	SM 4500 H+ B	
480-121857-19	DUP-2	Total/NA	Water	SM 4500 H+ B	
480-121857-20	FIELD BLANK 1	Total/NA	Water	SM 4500 H+ B	
480-121857-21	FIELD BLANK 2	Total/NA	Water	SM 4500 H+ B	
LCS 480-369394/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-369394/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-121857-13 DU	D-5S2	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 369686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-3	D-2S	Total/NA	Water	SM 2540C	
480-121857-4	D-2D	Total/NA	Water	SM 2540C	
480-121857-5	D-4S	Total/NA	Water	SM 2540C	
480-121857-6	D-4D	Total/NA	Water	SM 2540C	
480-121857-7	D-8	Total/NA	Water	SM 2540C	
480-121857-8	D-9	Total/NA	Water	SM 2540C	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## General Chemistry (Continued)

### Analysis Batch: 369686 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-369686/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-369686/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-121857-3 DU	D-2S	Total/NA	Water	SM 2540C	

### Analysis Batch: 369688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	SM 2540C	
480-121857-2	D-1S	Total/NA	Water	SM 2540C	
480-121857-9	U-4S	Total/NA	Water	SM 2540C	
480-121857-10	U-4D	Total/NA	Water	SM 2540C	
480-121857-11	U-5S	Total/NA	Water	SM 2540C	
480-121857-12	U-5D	Total/NA	Water	SM 2540C	
480-121857-13	D-5S2	Total/NA	Water	SM 2540C	
480-121857-14	D-5D	Total/NA	Water	SM 2540C	
480-121857-15	D-3S	Total/NA	Water	SM 2540C	
480-121857-16	D-3D	Total/NA	Water	SM 2540C	
480-121857-18	DUP-1	Total/NA	Water	SM 2540C	
480-121857-19	DUP-2	Total/NA	Water	SM 2540C	
480-121857-20	FIELD BLANK 1	Total/NA	Water	SM 2540C	
480-121857-21	FIELD BLANK 2	Total/NA	Water	SM 2540C	
MB 480-369688/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-369688/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-121857-1 DU	D-1D	Total/NA	Water	SM 2540C	

### Analysis Batch: 371460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-2	D-1S	Total/NA	Water	300.0	
480-121857-3	D-2S	Total/NA	Water	300.0	
480-121857-4	D-2D	Total/NA	Water	300.0	
480-121857-5	D-4S	Total/NA	Water	300.0	
480-121857-6	D-4D	Total/NA	Water	300.0	
480-121857-7	D-8	Total/NA	Water	300.0	
480-121857-8	D-9	Total/NA	Water	300.0	
480-121857-9	U-4S	Total/NA	Water	300.0	
480-121857-10	U-4D	Total/NA	Water	300.0	
480-121857-11	U-5S	Total/NA	Water	300.0	
480-121857-12	U-5D	Total/NA	Water	300.0	
480-121857-13	D-5S2	Total/NA	Water	300.0	
480-121857-14	D-5D	Total/NA	Water	300.0	
480-121857-15	D-3S	Total/NA	Water	300.0	
480-121857-16	D-3D	Total/NA	Water	300.0	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	300.0	
480-121857-18	DUP-1	Total/NA	Water	300.0	
480-121857-19	DUP-2	Total/NA	Water	300.0	
480-121857-20	FIELD BLANK 1	Total/NA	Water	300.0	
480-121857-21	FIELD BLANK 2	Total/NA	Water	300.0	
MB 480-371460/28	Method Blank	Total/NA	Water	300.0	
MB 480-371460/4	Method Blank	Total/NA	Water	300.0	
LCS 480-371460/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-371460/3	Lab Control Sample	Total/NA	Water	300.0	
480-121857-7 MS	D-8	Total/NA	Water	300.0	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## General Chemistry (Continued)

### Analysis Batch: 371460 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-7 MSD	D-8	Total/NA	Water	300.0	
480-121857-16 MS	D-3D	Total/NA	Water	300.0	

### Analysis Batch: 371464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	300.0	
MB 480-371464/28	Method Blank	Total/NA	Water	300.0	
LCS 480-371464/27	Lab Control Sample	Total/NA	Water	300.0	
480-121857-1 MS	D-1D	Total/NA	Water	300.0	



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-1D**  
**Date Collected: 07/25/17 15:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 02:22	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 02:41	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 18:36	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 08:32	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 13:57	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371464	08/10/17 21:03	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 20:07	ALZ	TAL BUF

**Client Sample ID: D-1S**  
**Date Collected: 07/25/17 14:25**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 02:25	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 02:47	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 18:41	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 08:35	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:05	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:02	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 20:10	ALZ	TAL BUF

**Client Sample ID: D-2S**  
**Date Collected: 07/26/17 08:20**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 02:53	LMH	TAL BUF
Total/NA	Prep	3005A			371313	08/10/17 08:25	EMB	TAL BUF
Total/NA	Analysis	6010C		1	371843	08/11/17 12:20	AMH	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-2S**

**Lab Sample ID: 480-121857-3**

**Date Collected: 07/26/17 08:20**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:10	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:04	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 08:38	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:07	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:11	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 18:51	ALZ	TAL BUF

**Client Sample ID: D-2D**

**Lab Sample ID: 480-121857-4**

**Date Collected: 07/26/17 08:40**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 02:56	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:37	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:32	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 08:51	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:08	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:19	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 18:54	ALZ	TAL BUF

**Client Sample ID: D-4S**

**Lab Sample ID: 480-121857-5**

**Date Collected: 07/26/17 09:10**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:00	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:43	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:37	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: D-4S**

**Date Collected: 07/26/17 09:10**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	373095	08/20/17 09:02	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:10	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:27	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 18:57	ALZ	TAL BUF

**Client Sample ID: D-4D**

**Date Collected: 07/26/17 09:35**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:03	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:48	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:43	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:05	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:16	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:35	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:00	ALZ	TAL BUF

**Client Sample ID: D-8**

**Date Collected: 07/26/17 09:55**

**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:07	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:54	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:48	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:08	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:17	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 11:43	RJS	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Client Sample ID: D-8

Date Collected: 07/26/17 09:55

Date Received: 07/28/17 09:30

## Lab Sample ID: 480-121857-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:02	ALZ	TAL BUF

## Client Sample ID: D-9

Date Collected: 07/26/17 10:40

Date Received: 07/28/17 09:30

## Lab Sample ID: 480-121857-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:10	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 03:59	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 19:54	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:10	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:19	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 12:24	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:05	ALZ	TAL BUF

## Client Sample ID: U-4S

Date Collected: 07/25/17 09:20

Date Received: 07/28/17 09:30

## Lab Sample ID: 480-121857-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:24	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:22	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:17	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:13	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:21	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 12:32	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:08	ALZ	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-4D**

**Lab Sample ID: 480-121857-10**

**Date Collected: 07/25/17 09:30**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:28	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:28	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:22	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:15	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:22	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 12:40	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:11	ALZ	TAL BUF

**Client Sample ID: U-5S**

**Lab Sample ID: 480-121857-11**

**Date Collected: 07/25/17 10:25**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:31	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:33	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:28	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:18	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:24	BMB	TAL BUF
Total/NA	Analysis	300.0		5	371460	08/10/17 12:48	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:14	ALZ	TAL BUF

**Client Sample ID: U-5D**

**Lab Sample ID: 480-121857-12**

**Date Collected: 07/25/17 10:35**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:35	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:39	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: U-5D**

**Lab Sample ID: 480-121857-12**

**Date Collected: 07/25/17 10:35**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	371280	08/08/17 20:33	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:21	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:26	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 12:56	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:16	ALZ	TAL BUF

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-121857-13**

**Date Collected: 07/25/17 11:30**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:38	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:44	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:39	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:23	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:28	BMB	TAL BUF
Total/NA	Analysis	300.0		5	371460	08/10/17 13:05	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:22	ALZ	TAL BUF

**Client Sample ID: D-5D**

**Lab Sample ID: 480-121857-14**

**Date Collected: 07/25/17 12:10**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:42	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:50	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:44	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:26	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:30	BMB	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	371460	08/10/17 13:13	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:28	ALZ	TAL BUF

## Client Sample ID: D-3S

## Lab Sample ID: 480-121857-15

Date Collected: 07/25/17 13:20

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:46	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 04:55	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:50	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:37	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:31	BMB	TAL BUF
Total/NA	Analysis	300.0		5	371460	08/10/17 13:21	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:30	ALZ	TAL BUF

## Client Sample ID: D-3D

## Lab Sample ID: 480-121857-16

Date Collected: 07/25/17 13:40

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:49	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 05:01	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 20:55	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:40	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:37	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 13:29	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:33	ALZ	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-121857-17**

**Date Collected: 07/26/17 11:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 03:53	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 05:06	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 21:01	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:43	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:39	BMB	TAL BUF
Total/NA	Analysis	300.0		1	371460	08/10/17 14:18	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369686	07/31/17 16:42	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:36	ALZ	TAL BUF

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-121857-18**

**Date Collected: 07/25/17 00:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 04:07	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 05:12	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 21:06	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:45	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:40	BMB	TAL BUF
Total/NA	Analysis	300.0		5	371460	08/10/17 14:26	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:39	ALZ	TAL BUF

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-121857-19**

**Date Collected: 07/25/17 00:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 04:10	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 05:35	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-121857-19**

**Date Collected: 07/25/17 00:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	371280	08/08/17 21:29	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:48	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:42	BMB	TAL BUF
Total/NA	Analysis	300.0		2	371460	08/10/17 14:34	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:42	ALZ	TAL BUF

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-121857-20**

**Date Collected: 07/25/17 11:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369594	08/01/17 08:45	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370059	08/02/17 04:14	LMH	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	370816	08/06/17 05:40	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371280	08/08/17 21:35	JRK	TAL BUF
Total/NA	Prep	3020A			369595	08/01/17 07:32	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373095	08/20/17 09:50	JRK	TAL BUF
Total/NA	Prep	7470A			369512	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:44	BMB	TAL BUF
Total/NA	Analysis	300.0		1	371460	08/10/17 14:42	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:44	ALZ	TAL BUF

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-121857-21**

**Date Collected: 07/25/17 14:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			369592	08/01/17 08:10	EMB	TAL BUF
Total/NA	Analysis	6010C		1	370130	08/02/17 09:23	LMH	TAL BUF
Total/NA	Prep	3020A			370256	08/03/17 09:10	EMB	TAL BUF
Total/NA	Analysis	6020A		1	371738	08/11/17 00:26	JRK	TAL BUF
Total/NA	Prep	3020A			370256	08/03/17 09:10	EMB	TAL BUF
Total/NA	Analysis	6020A		1	372855	08/18/17 09:59	JRK	TAL BUF
Total/NA	Prep	7470A			369513	07/31/17 10:40	BMB	TAL BUF
Total/NA	Analysis	7470A		1	369699	07/31/17 14:50	BMB	TAL BUF
Total/NA	Analysis	300.0		1	371460	08/10/17 14:50	RJS	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-121857-21**

**Date Collected: 07/25/17 14:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	369688	07/31/17 16:56	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	369394	07/28/17 19:47	ALZ	TAL BUF

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
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- 13
- 14

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-121857-1	D-1D	Water	07/25/17 15:10	07/28/17 09:30
480-121857-2	D-1S	Water	07/25/17 14:25	07/28/17 09:30
480-121857-3	D-2S	Water	07/26/17 08:20	07/28/17 09:30
480-121857-4	D-2D	Water	07/26/17 08:40	07/28/17 09:30
480-121857-5	D-4S	Water	07/26/17 09:10	07/28/17 09:30
480-121857-6	D-4D	Water	07/26/17 09:35	07/28/17 09:30
480-121857-7	D-8	Water	07/26/17 09:55	07/28/17 09:30
480-121857-8	D-9	Water	07/26/17 10:40	07/28/17 09:30
480-121857-9	U-4S	Water	07/25/17 09:20	07/28/17 09:30
480-121857-10	U-4D	Water	07/25/17 09:30	07/28/17 09:30
480-121857-11	U-5S	Water	07/25/17 10:25	07/28/17 09:30
480-121857-12	U-5D	Water	07/25/17 10:35	07/28/17 09:30
480-121857-13	D-5S2	Water	07/25/17 11:30	07/28/17 09:30
480-121857-14	D-5D	Water	07/25/17 12:10	07/28/17 09:30
480-121857-15	D-3S	Water	07/25/17 13:20	07/28/17 09:30
480-121857-16	D-3D	Water	07/25/17 13:40	07/28/17 09:30
480-121857-17	EQUIPMENT BLANK	Water	07/26/17 11:00	07/28/17 09:30
480-121857-18	DUP-1	Water	07/25/17 00:00	07/28/17 09:30
480-121857-19	DUP-2	Water	07/25/17 00:00	07/28/17 09:30
480-121857-20	FIELD BLANK 1	Water	07/25/17 11:00	07/28/17 09:30
480-121857-21	FIELD BLANK 2	Water	07/25/17 14:00	07/28/17 09:30

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

**Project Manager: Ryan Van Dette**  
Tell/Fax: \_\_\_\_\_  
Analysis Turnaround Time  
CALENDAR DAYS \_\_\_\_\_ WORKING DAYS \_\_\_\_\_  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Performs (total) + Mercury	Metals (total) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-1D	7/25/17	8:10	Grab	Water	7		X	X	X	X	X	X	X	X	
D-1S	7/25/17	14:25	Grab	Water	7		X	X	X	X	X	X	X	X	
D-2S	7/26/17	8:20	Grab	Water	7		X	X	X	X	X	X	X	X	
D-2D	7/26/17	8:40	Grab	Water	7		X	X	X	X	X	X	X	X	
D-4S	7/26/17	9:10	Grab	Water	7		X	X	X	X	X	X	X	X	
D-4D	7/26/17	9:35	Grab	Water	7		X	X	X	X	X	X	X	X	
D-8	7/26/17	9:55	Grab	Water	7		X	X	X	X	X	X	X	X	
D-9	7/26/17	10:40	Grab	Water	7		X	X	X	X	X	X	X	X	
Equipment Blank	7/26/17	11:00	Grab	Water	7		X	X	X	X	X	X	X	X	

**Preservation Used:** 1 = Ice, 2 = HCl; 3 = H2SO4; 4 = HNO3; 5 = NaOH; 6 = Other

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Custody Seal No.:** \_\_\_\_\_  
Custody Seal No.: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: 7/26/17 15:00  
Received by: [Signature]  
Company: T.A.  
Date/Time: 7/26/17  
Received by: [Signature]  
Company: T.A.  
Date/Time: 7/26/17  
Received in Laboratory by: [Signature]  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

Therm ID No.: \_\_\_\_\_  
Date/Time: 7-24-17 11:50  
Date/Time: 7/26/17 0930  
Date/Time: \_\_\_\_\_





Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

Project Manager: Ryan Van Dette  
Site Contact: Nathaniel Beilerman  
Date: 7/25/17  
Carrier: \_\_\_\_\_

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

Lab Contact:  
Metals (totals) + Mercury  
Radium 226 & 228 combined  
pH  
Sulfate  
Chloride  
Fluoride  
TDS

Analysis Turnaround Time  
WORKING DAYS  
CALENDAR DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
U-45	7/25/17	9:20	Grab	Water	7	X	X	X	X	X	X	X	X	X	
U-49	7/25/17	9:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	
U-55	7/25/17	10:25	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Duplicate #1	7/25/17	-	Grab	Water	7	X	X	X	X	X	X	X	X	X	
U-59	7/25/17	10:35	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-552	7/25/17	11:30	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-5D	7/25/17	12:10	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-35	7/25/17	13:20	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-3D	7/25/17	13:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Duplicate #2	7/25/17	-	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Field Blank 1	7/25/17	11:00	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Field Blank 2	7/25/17	14:00	Grab	Water	7	X	X	X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other  
Possible Hazard Identification: \_\_\_\_\_  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Custody Seal No.: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: 7/26/17 15:00  
Company: \_\_\_\_\_  
Date/Time: 7-26-17 11:00  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_  
Cooler Temp (°C): Obs'd: \_\_\_\_\_  
Corr'd: \_\_\_\_\_  
Therm ID No.: \_\_\_\_\_  
Date/Time: 7-26-17 15:00  
Company: \_\_\_\_\_  
Date/Time: 7/28/17 09:30  
Company: \_\_\_\_\_  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-121857-1

**Login Number: 121857**

**List Source: TestAmerica Buffalo**

**List Number: 1**

**Creator: Janish, Carl M**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ges
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-121857-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

8/29/2017 3:43:48 PM

Ryan VanDette, Project Manager II

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Job ID: 480-121857-2**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-121857-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 7/28/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 2.0° C, 2.6° C, 2.9° C, 3.5° C and 3.8° C.

#### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): FIELD BLANK 2 (480-121857-21). The container labels list D-7D, while the COC lists FIELD BLANK #2. Logged in as per the COC pending PM/client resolution.

#### RAD

Method(s) 903.0: Radium-228 Prep Batch 160-320431

The following samples have barium carrier recoveries above the 110% QC limit; (480-121857-4: 119%, 480-121857-5: 112%, 480-121857-10: 112%). Prep analyst noted interferences (See NCM 160-118127). The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples associated with the batch have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported. D-1D (480-121857-1), D-1S (480-121857-2), D-2S (480-121857-3), D-2D (480-121857-4), D-4S (480-121857-5), D-4D (480-121857-6), D-8 (480-121857-7), D-9 (480-121857-8), U-4S (480-121857-9), U-4D (480-121857-10), U-5S (480-121857-11), U-5D (480-121857-12), D-5S2 (480-121857-13), D-5D (480-121857-14), D-3S (480-121857-15), D-3D (480-121857-16), EQUIPMENT BLANK (480-121857-17), DUP-1 (480-121857-18), DUP-2 (480-121857-19), FIELD BLANK 1 (480-121857-20), (LCS 160-320431/2-A), (MB 160-320431/1-A) and (480-121857-C-1-A DU)

Method(s) 904.0: Radium-228 Prep Batch 160-320542

The following samples have barium carrier recoveries above the 110% QC limit; (480-121857-4: 119%, 480-121857-5: 112%, 480-121857-10: 112%). Prep analyst noted interferences (See NCM 160-118126). The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples associated with the batch have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported. D-1D (480-121857-1), D-1S (480-121857-2), D-2S (480-121857-3), D-2D (480-121857-4), D-4S (480-121857-5), D-4D (480-121857-6), D-8 (480-121857-7), D-9 (480-121857-8), U-4S (480-121857-9), U-4D (480-121857-10), U-5S (480-121857-11), U-5D (480-121857-12), D-5S2 (480-121857-13), D-5D (480-121857-14), D-3S (480-121857-15), D-3D (480-121857-16), EQUIPMENT BLANK (480-121857-17), DUP-1 (480-121857-18), DUP-2 (480-121857-19), FIELD BLANK 1 (480-121857-20), (LCS 160-320542/2-A), (MB 160-320542/1-A) and (480-121857-C-1-B DU).

Method(s) PrecSep\_0: Radium-228 Prep Batch 160-320542:

The barium carrier recoveries are outside the upper control limit (110%) for the following samples: D-2D (480-121857-4), D-4S (480-121857-5) and U-4D (480-121857-10). The QC samples associated with the batch have acceptable carrier recoveries indicating the possibility of matrix interferences. There were no other anomalies noted for this batch.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-320431:

The barium carrier recovery is outside the upper control limit (110%) for the following samples: D-2D (480-121857-4), D-4S (480-121857-5) and U-4D (480-121857-10). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference. The pellets were noted as larger during the out of ingrowth process.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-1D** **Lab Sample ID: 480-121857-1**

No Detections.

**Client Sample ID: D-1S** **Lab Sample ID: 480-121857-2**

No Detections.

**Client Sample ID: D-2S** **Lab Sample ID: 480-121857-3**

No Detections.

**Client Sample ID: D-2D** **Lab Sample ID: 480-121857-4**

No Detections.

**Client Sample ID: D-4S** **Lab Sample ID: 480-121857-5**

No Detections.

**Client Sample ID: D-4D** **Lab Sample ID: 480-121857-6**

No Detections.

**Client Sample ID: D-8** **Lab Sample ID: 480-121857-7**

No Detections.

**Client Sample ID: D-9** **Lab Sample ID: 480-121857-8**

No Detections.

**Client Sample ID: U-4S** **Lab Sample ID: 480-121857-9**

No Detections.

**Client Sample ID: U-4D** **Lab Sample ID: 480-121857-10**

No Detections.

**Client Sample ID: U-5S** **Lab Sample ID: 480-121857-11**

No Detections.

**Client Sample ID: U-5D** **Lab Sample ID: 480-121857-12**

No Detections.

**Client Sample ID: D-5S2** **Lab Sample ID: 480-121857-13**

No Detections.

**Client Sample ID: D-5D** **Lab Sample ID: 480-121857-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



## Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-3S**

**Lab Sample ID: 480-121857-15**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-121857-16**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-121857-17**

No Detections.

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-121857-18**

No Detections.

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-121857-19**

No Detections.

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-121857-20**

No Detections.

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-121857-21**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-1D**  
**Date Collected: 07/25/17 15:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0520	U	0.0510	0.0512	1.00	0.0773	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:16	08/29/17 05:57	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.152	U	0.247	0.247	1.00	0.416	pCi/L	08/03/17 08:59	08/16/17 15:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:59	08/16/17 15:08	1
Y Carrier	86.7		40 - 110					08/03/17 08:59	08/16/17 15:08	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-1S**

**Lab Sample ID: 480-121857-2**

Date Collected: 07/25/17 14:25

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.134		0.0630	0.0641	1.00	0.0573	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					08/03/17 08:16	08/29/17 05:57	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.341	U	0.234	0.236	1.00	0.362	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	85.2		40 - 110					08/03/17 08:59	08/16/17 15:09	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-2S**

**Lab Sample ID: 480-121857-3**

Date Collected: 07/26/17 08:20

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.141		0.0683	0.0695	1.00	0.0727	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/03/17 08:16	08/29/17 05:57	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.388	U	0.265	0.267	1.00	0.412	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	83.7		40 - 110					08/03/17 08:59	08/16/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-2D**

**Lab Sample ID: 480-121857-4**

Date Collected: 07/26/17 08:40

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0703	U	0.0552	0.0556	1.00	0.0767	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	119	X	40 - 110					08/03/17 08:16	08/29/17 05:57	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.204	U	0.208	0.209	1.00	0.338	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	119	X	40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	86.7		40 - 110					08/03/17 08:59	08/16/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-4S**

**Lab Sample ID: 480-121857-5**

Date Collected: 07/26/17 09:10

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0607	U	0.0527	0.0530	1.00	0.0759	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	112	X	40 - 110					08/03/17 08:16	08/29/17 05:57	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.196	U	0.227	0.228	1.00	0.374	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	112	X	40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	87.5		40 - 110					08/03/17 08:59	08/16/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-4D**  
**Date Collected: 07/26/17 09:35**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-6**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0555	U	0.0516	0.0519	1.00	0.0770	pCi/L	08/03/17 08:16	08/29/17 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/03/17 08:16	08/29/17 05:58	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0714	U	0.199	0.199	1.00	0.370	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	88.6		40 - 110					08/03/17 08:59	08/16/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-8**

**Lab Sample ID: 480-121857-7**

**Date Collected: 07/26/17 09:55**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0638	U	0.0579	0.0582	1.00	0.0876	pCi/L	08/03/17 08:16	08/29/17 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/03/17 08:16	08/29/17 05:58	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0274	U	0.193	0.193	1.00	0.344	pCi/L	08/03/17 08:59	08/16/17 15:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/03/17 08:59	08/16/17 15:09	1
Y Carrier	90.1		40 - 110					08/03/17 08:59	08/16/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-9**

**Lab Sample ID: 480-121857-8**

Date Collected: 07/26/17 10:40

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0985		0.0627	0.0634	1.00	0.0809	pCi/L	08/03/17 08:16	08/29/17 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/03/17 08:16	08/29/17 05:58	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.339	U	0.233	0.235	1.00	0.360	pCi/L	08/03/17 08:59	08/16/17 15:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/03/17 08:59	08/16/17 15:10	1
Y Carrier	88.2		40 - 110					08/03/17 08:59	08/16/17 15:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: U-4S**

**Lab Sample ID: 480-121857-9**

Date Collected: 07/25/17 09:20

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0559	U	0.0536	0.0539	1.00	0.0818	pCi/L	08/03/17 08:16	08/29/17 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:16	08/29/17 05:58	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.371	U	0.257	0.259	1.00	0.401	pCi/L	08/03/17 08:59	08/16/17 15:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:59	08/16/17 15:10	1
Y Carrier	87.5		40 - 110					08/03/17 08:59	08/16/17 15:10	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: U-4D**

**Lab Sample ID: 480-121857-10**

Date Collected: 07/25/17 09:30

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0216	U	0.0442	0.0442	1.00	0.0811	pCi/L	08/03/17 08:16	08/29/17 05:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	112	X	40 - 110					08/03/17 08:16	08/29/17 05:58	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.320	U	0.290	0.292	1.00	0.469	pCi/L	08/03/17 08:59	08/16/17 15:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	112	X	40 - 110					08/03/17 08:59	08/16/17 15:03	1
Y Carrier	87.5		40 - 110					08/03/17 08:59	08/16/17 15:03	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: U-5S**  
**Date Collected: 07/25/17 10:25**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-11**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.190		0.0752	0.0772	1.00	0.0728	pCi/L	08/03/17 08:16	08/29/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/03/17 08:16	08/29/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.468		0.260	0.264	1.00	0.394	pCi/L	08/03/17 08:59	08/16/17 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/03/17 08:59	08/16/17 15:04	1
Y Carrier	90.5		40 - 110					08/03/17 08:59	08/16/17 15:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: U-5D**  
**Date Collected: 07/25/17 10:35**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-12**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0315	U	0.0420	0.0421	1.00	0.0703	pCi/L	08/03/17 08:16	08/29/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/03/17 08:16	08/29/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0325	U	0.252	0.252	1.00	0.449	pCi/L	08/03/17 08:59	08/16/17 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/03/17 08:59	08/16/17 15:04	1
Y Carrier	88.6		40 - 110					08/03/17 08:59	08/16/17 15:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-121857-13**

Date Collected: 07/25/17 11:30

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0598	U	0.0553	0.0555	1.00	0.0835	pCi/L	08/03/17 08:16	08/29/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/03/17 08:16	08/29/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.425		0.268	0.271	1.00	0.413	pCi/L	08/03/17 08:59	08/16/17 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/03/17 08:59	08/16/17 15:04	1
Y Carrier	84.9		40 - 110					08/03/17 08:59	08/16/17 15:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-5D**  
**Date Collected: 07/25/17 12:10**  
**Date Received: 07/28/17 09:30**

**Lab Sample ID: 480-121857-14**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0783	U	0.0600	0.0604	1.00	0.0854	pCi/L	08/03/17 08:16	08/29/17 06:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/03/17 08:16	08/29/17 06:00	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.242	U	0.224	0.225	1.00	0.360	pCi/L	08/03/17 08:59	08/16/17 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/03/17 08:59	08/16/17 15:04	1
Y Carrier	87.9		40 - 110					08/03/17 08:59	08/16/17 15:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-3S**

**Lab Sample ID: 480-121857-15**

Date Collected: 07/25/17 13:20

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0648	U	0.0582	0.0585	1.00	0.0877	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.114	U	0.228	0.228	1.00	0.388	pCi/L	08/03/17 08:59	08/16/17 15:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/03/17 08:59	08/16/17 15:04	1
Y Carrier	90.1		40 - 110					08/03/17 08:59	08/16/17 15:04	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: D-3D**

**Lab Sample ID: 480-121857-16**

Date Collected: 07/25/17 13:40

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0652	0.0662	1.00	0.0727	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0871	U	0.256	0.256	1.00	0.442	pCi/L	08/03/17 08:59	08/16/17 15:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/03/17 08:59	08/16/17 15:05	1
Y Carrier	80.7		40 - 110					08/03/17 08:59	08/16/17 15:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-121857-17**

Date Collected: 07/26/17 11:00

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0434	U	0.0509	0.0511	1.00	0.0827	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0570	U	0.230	0.230	1.00	0.402	pCi/L	08/03/17 08:59	08/16/17 15:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/03/17 08:59	08/16/17 15:05	1
Y Carrier	87.5		40 - 110					08/03/17 08:59	08/16/17 15:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-121857-18**

**Date Collected: 07/25/17 00:00**

**Matrix: Water**

**Date Received: 07/28/17 09:30**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0695	U	0.0520	0.0524	1.00	0.0702	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.463		0.256	0.260	1.00	0.384	pCi/L	08/03/17 08:59	08/16/17 15:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/03/17 08:59	08/16/17 15:05	1
Y Carrier	86.0		40 - 110					08/03/17 08:59	08/16/17 15:05	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: DUP-2**

**Lab Sample ID: 480-121857-19**

Date Collected: 07/25/17 00:00

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.174		0.0745	0.0761	1.00	0.0760	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0267	U	0.200	0.200	1.00	0.365	pCi/L	08/03/17 08:59	08/16/17 15:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/03/17 08:59	08/16/17 15:05	1
Y Carrier	88.2		40 - 110					08/03/17 08:59	08/16/17 15:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: FIELD BLANK 1**

**Lab Sample ID: 480-121857-20**

Date Collected: 07/25/17 11:00

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0730	U	0.0584	0.0588	1.00	0.0858	pCi/L	08/03/17 08:16	08/29/17 06:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/03/17 08:16	08/29/17 06:01	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0578	U	0.225	0.225	1.00	0.392	pCi/L	08/03/17 08:59	08/16/17 15:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/03/17 08:59	08/16/17 15:05	1
Y Carrier	87.9		40 - 110					08/03/17 08:59	08/16/17 15:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

**Client Sample ID: FIELD BLANK 2**

**Lab Sample ID: 480-121857-21**

Date Collected: 07/25/17 14:00

Matrix: Water

Date Received: 07/28/17 09:30

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0934		0.0575	0.0581	1.00	0.0704	pCi/L	08/03/17 10:35	08/28/17 06:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/03/17 10:35	08/28/17 06:13	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.290	U	0.225	0.227	1.00	0.355	pCi/L	08/03/17 10:52	08/09/17 14:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/03/17 10:52	08/09/17 14:03	1
Y Carrier	86.0		40 - 110					08/03/17 10:52	08/09/17 14:03	1

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
480-121857-1	D-1D	101	
480-121857-1 DU	D-1D	105	
480-121857-2	D-1S	98.5	
480-121857-3	D-2S	102	
480-121857-4	D-2D	119 X	
480-121857-5	D-4S	112 X	
480-121857-6	D-4D	107	
480-121857-7	D-8	103	
480-121857-8	D-9	97.6	
480-121857-9	U-4S	101	
480-121857-10	U-4D	112 X	
480-121857-11	U-5S	108	
480-121857-12	U-5D	107	
480-121857-13	D-5S2	105	
480-121857-14	D-5D	103	
480-121857-15	D-3S	101	
480-121857-16	D-3D	109	
480-121857-17	EQUIPMENT BLANK	106	
480-121857-18	DUP-1	109	
480-121857-19	DUP-2	106	
480-121857-20	FIELD BLANK 1	105	
480-121857-21	FIELD BLANK 2	99.4	
LCS 160-320431/2-A	Lab Control Sample	105	
LCS 160-320646/2-A	Lab Control Sample	104	
MB 160-320431/1-A	Method Blank	109	
MB 160-320646/1-A	Method Blank	104	

**Tracer/Carrier Legend**

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-121857-1	D-1D	101	86.7
480-121857-1 DU	D-1D	105	81.5
480-121857-2	D-1S	98.5	85.2
480-121857-3	D-2S	102	83.7
480-121857-4	D-2D	119 X	86.7
480-121857-5	D-4S	112 X	87.5
480-121857-6	D-4D	107	88.6
480-121857-7	D-8	103	90.1
480-121857-8	D-9	97.6	88.2
480-121857-9	U-4S	101	87.5
480-121857-10	U-4D	112 X	87.5
480-121857-11	U-5S	108	90.5
480-121857-12	U-5D	107	88.6

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# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-121857-13	D-5S2	105	84.9
480-121857-14	D-5D	103	87.9
480-121857-15	D-3S	101	90.1
480-121857-16	D-3D	109	80.7
480-121857-17	EQUIPMENT BLANK	106	87.5
480-121857-18	DUP-1	109	86.0
480-121857-19	DUP-2	106	88.2
480-121857-20	FIELD BLANK 1	105	87.9
480-121857-21	FIELD BLANK 2	99.4	86.0
LCS 160-320542/2-A	Lab Control Sample	105	85.6
LCS 160-320648/2-A	Lab Control Sample	104	95.3
MB 160-320542/1-A	Method Blank	109	84.5
MB 160-320648/1-A	Method Blank	104	87.1

#### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-320431/1-A**  
**Matrix: Water**  
**Analysis Batch: 324783**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 320431**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1151		0.0653	0.0661	1.00	0.0776	pCi/L	08/03/17 08:16	08/29/17 05:57	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	109				08/03/17 08:16	08/29/17 05:57	1			

**Lab Sample ID: LCS 160-320431/2-A**  
**Matrix: Water**  
**Analysis Batch: 324783**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 320431**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.573		0.997	1.00	0.0885	pCi/L	84	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	40 - 110						
Ba Carrier	105				08/03/17 08:16	08/29/17 05:57	1		

**Lab Sample ID: 480-121857-1 DU**  
**Matrix: Water**  
**Analysis Batch: 324783**

**Client Sample ID: D-1D**  
**Prep Type: Total/NA**  
**Prep Batch: 320431**

Analyte	Sample Sample		DU DU		Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.0520	U	0.05023	U	0.0508	1.00	0.0775	pCi/L	0.02	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	105				08/03/17 10:35	08/28/17 06:12	1			

**Lab Sample ID: MB 160-320646/1-A**  
**Matrix: Water**  
**Analysis Batch: 324696**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 320646**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1061		0.0581	0.0589	1.00	0.0667	pCi/L	08/03/17 10:35	08/28/17 06:12	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
Ba Carrier	104				08/03/17 10:35	08/28/17 06:12	1			

**Lab Sample ID: LCS 160-320646/2-A**  
**Matrix: Water**  
**Analysis Batch: 324696**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 320646**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	10.02		1.02	1.00	0.0678	pCi/L	88	68 - 137

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-320646/2-A  
 Matrix: Water  
 Analysis Batch: 324696

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 320646

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110

## Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-320542/1-A  
 Matrix: Water  
 Analysis Batch: 322485

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 320542

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.03572	U	0.209	0.209	1.00	0.369	pCi/L	08/03/17 08:59	08/16/17 15:08	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/03/17 08:59	08/16/17 15:08	1
Y Carrier	84.5		40 - 110					08/03/17 08:59	08/16/17 15:08	1

Lab Sample ID: LCS 160-320542/2-A  
 Matrix: Water  
 Analysis Batch: 322485

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 320542

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	13.0	14.04		1.52	1.00	0.405	pCi/L	108	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						
Y Carrier	85.6		40 - 110						

Lab Sample ID: 480-121857-1 DU  
 Matrix: Water  
 Analysis Batch: 322485

Client Sample ID: D-1D  
 Prep Type: Total/NA  
 Prep Batch: 320542

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.152	U	0.01564	U	0.229	1.00	0.408	pCi/L	0.29	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	105		40 - 110							
Y Carrier	81.5		40 - 110							

Lab Sample ID: MB 160-320648/1-A  
 Matrix: Water  
 Analysis Batch: 321490

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 320648

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.06264	U	0.172	0.172	1.00	0.323	pCi/L	08/03/17 10:52	08/09/17 14:03	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

Carrier	MB MB		Limits
	%Yield	Qualifier	
Ba Carrier	104		40 - 110
Y Carrier	87.1		40 - 110

Prepared	Analyzed	Dil Fac
08/03/17 10:52	08/09/17 14:03	1
08/03/17 10:52	08/09/17 14:03	1

Lab Sample ID: LCS 160-320648/2-A  
 Matrix: Water  
 Analysis Batch: 321490

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 320648

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	13.1	14.79		1.55	1.00	0.260	pCi/L	113	56 - 140

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	104		40 - 110
Y Carrier	95.3		40 - 110

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Rad

### Prep Batch: 320431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	PrecSep-21	
480-121857-2	D-1S	Total/NA	Water	PrecSep-21	
480-121857-3	D-2S	Total/NA	Water	PrecSep-21	
480-121857-4	D-2D	Total/NA	Water	PrecSep-21	
480-121857-5	D-4S	Total/NA	Water	PrecSep-21	
480-121857-6	D-4D	Total/NA	Water	PrecSep-21	
480-121857-7	D-8	Total/NA	Water	PrecSep-21	
480-121857-8	D-9	Total/NA	Water	PrecSep-21	
480-121857-9	U-4S	Total/NA	Water	PrecSep-21	
480-121857-10	U-4D	Total/NA	Water	PrecSep-21	
480-121857-11	U-5S	Total/NA	Water	PrecSep-21	
480-121857-12	U-5D	Total/NA	Water	PrecSep-21	
480-121857-13	D-5S2	Total/NA	Water	PrecSep-21	
480-121857-14	D-5D	Total/NA	Water	PrecSep-21	
480-121857-15	D-3S	Total/NA	Water	PrecSep-21	
480-121857-16	D-3D	Total/NA	Water	PrecSep-21	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	PrecSep-21	
480-121857-18	DUP-1	Total/NA	Water	PrecSep-21	
480-121857-19	DUP-2	Total/NA	Water	PrecSep-21	
480-121857-20	FIELD BLANK 1	Total/NA	Water	PrecSep-21	
MB 160-320431/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-320431/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-121857-1 DU	D-1D	Total/NA	Water	PrecSep-21	

### Prep Batch: 320542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-1	D-1D	Total/NA	Water	PrecSep_0	
480-121857-2	D-1S	Total/NA	Water	PrecSep_0	
480-121857-3	D-2S	Total/NA	Water	PrecSep_0	
480-121857-4	D-2D	Total/NA	Water	PrecSep_0	
480-121857-5	D-4S	Total/NA	Water	PrecSep_0	
480-121857-6	D-4D	Total/NA	Water	PrecSep_0	
480-121857-7	D-8	Total/NA	Water	PrecSep_0	
480-121857-8	D-9	Total/NA	Water	PrecSep_0	
480-121857-9	U-4S	Total/NA	Water	PrecSep_0	
480-121857-10	U-4D	Total/NA	Water	PrecSep_0	
480-121857-11	U-5S	Total/NA	Water	PrecSep_0	
480-121857-12	U-5D	Total/NA	Water	PrecSep_0	
480-121857-13	D-5S2	Total/NA	Water	PrecSep_0	
480-121857-14	D-5D	Total/NA	Water	PrecSep_0	
480-121857-15	D-3S	Total/NA	Water	PrecSep_0	
480-121857-16	D-3D	Total/NA	Water	PrecSep_0	
480-121857-17	EQUIPMENT BLANK	Total/NA	Water	PrecSep_0	
480-121857-18	DUP-1	Total/NA	Water	PrecSep_0	
480-121857-19	DUP-2	Total/NA	Water	PrecSep_0	
480-121857-20	FIELD BLANK 1	Total/NA	Water	PrecSep_0	
MB 160-320542/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-320542/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-121857-1 DU	D-1D	Total/NA	Water	PrecSep_0	

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Rad (Continued)

### Prep Batch: 320646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	PrecSep-21	
MB 160-320646/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-320646/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 320648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121857-21	FIELD BLANK 2	Total/NA	Water	PrecSep_0	
MB 160-320648/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-320648/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Client Sample ID: D-1D

Lab Sample ID: 480-121857-1

Date Collected: 07/25/17 15:10

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:08	ALD	TAL SL

## Client Sample ID: D-1S

Lab Sample ID: 480-121857-2

Date Collected: 07/25/17 14:25

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-2S

Lab Sample ID: 480-121857-3

Date Collected: 07/26/17 08:20

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-2D

Lab Sample ID: 480-121857-4

Date Collected: 07/26/17 08:40

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-4S

Lab Sample ID: 480-121857-5

Date Collected: 07/26/17 09:10

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Client Sample ID: D-4S

Lab Sample ID: 480-121857-5

Date Collected: 07/26/17 09:10

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-4D

Lab Sample ID: 480-121857-6

Date Collected: 07/26/17 09:35

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-8

Lab Sample ID: 480-121857-7

Date Collected: 07/26/17 09:55

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:09	ALD	TAL SL

## Client Sample ID: D-9

Lab Sample ID: 480-121857-8

Date Collected: 07/26/17 10:40

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:10	ALD	TAL SL

## Client Sample ID: U-4S

Lab Sample ID: 480-121857-9

Date Collected: 07/25/17 09:20

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322485	08/16/17 15:10	ALD	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Client Sample ID: U-4D

Lab Sample ID: 480-121857-10

Date Collected: 07/25/17 09:30

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324783	08/29/17 05:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:03	ALD	TAL SL

## Client Sample ID: U-5S

Lab Sample ID: 480-121857-11

Date Collected: 07/25/17 10:25

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:04	ALD	TAL SL

## Client Sample ID: U-5D

Lab Sample ID: 480-121857-12

Date Collected: 07/25/17 10:35

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:04	ALD	TAL SL

## Client Sample ID: D-5S2

Lab Sample ID: 480-121857-13

Date Collected: 07/25/17 11:30

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:04	ALD	TAL SL

## Client Sample ID: D-5D

Lab Sample ID: 480-121857-14

Date Collected: 07/25/17 12:10

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Client Sample ID: D-5D

Lab Sample ID: 480-121857-14

Date Collected: 07/25/17 12:10

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	322356	08/16/17 15:04	ALD	TAL SL

## Client Sample ID: D-3S

Lab Sample ID: 480-121857-15

Date Collected: 07/25/17 13:20

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:04	ALD	TAL SL

## Client Sample ID: D-3D

Lab Sample ID: 480-121857-16

Date Collected: 07/25/17 13:40

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:05	ALD	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-121857-17

Date Collected: 07/26/17 11:00

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:05	ALD	TAL SL

## Client Sample ID: DUP-1

Lab Sample ID: 480-121857-18

Date Collected: 07/25/17 00:00

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:05	ALD	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

## Client Sample ID: DUP-2

Lab Sample ID: 480-121857-19

Date Collected: 07/25/17 00:00

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:05	ALD	TAL SL

## Client Sample ID: FIELD BLANK 1

Lab Sample ID: 480-121857-20

Date Collected: 07/25/17 11:00

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320431	08/03/17 08:16	LDE	TAL SL
Total/NA	Analysis	903.0		1	324784	08/29/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320542	08/03/17 08:59	LDE	TAL SL
Total/NA	Analysis	904.0		1	322356	08/16/17 15:05	ALD	TAL SL

## Client Sample ID: FIELD BLANK 2

Lab Sample ID: 480-121857-21

Date Collected: 07/25/17 14:00

Matrix: Water

Date Received: 07/28/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			320646	08/03/17 10:35	LDE	TAL SL
Total/NA	Analysis	903.0		1	324696	08/28/17 06:13	RTM	TAL SL
Total/NA	Prep	PrecSep_0			320648	08/03/17 10:52	LDE	TAL SL
Total/NA	Analysis	904.0		1	321490	08/09/17 14:03	ALD	TAL SL

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

### Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

### Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17 *
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17 *
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17 *
West Virginia DEP	State Program	3	381	08-31-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-121857-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-121857-1	D-1D	Water	07/25/17 15:10	07/28/17 09:30
480-121857-2	D-1S	Water	07/25/17 14:25	07/28/17 09:30
480-121857-3	D-2S	Water	07/26/17 08:20	07/28/17 09:30
480-121857-4	D-2D	Water	07/26/17 08:40	07/28/17 09:30
480-121857-5	D-4S	Water	07/26/17 09:10	07/28/17 09:30
480-121857-6	D-4D	Water	07/26/17 09:35	07/28/17 09:30
480-121857-7	D-8	Water	07/26/17 09:55	07/28/17 09:30
480-121857-8	D-9	Water	07/26/17 10:40	07/28/17 09:30
480-121857-9	U-4S	Water	07/25/17 09:20	07/28/17 09:30
480-121857-10	U-4D	Water	07/25/17 09:30	07/28/17 09:30
480-121857-11	U-5S	Water	07/25/17 10:25	07/28/17 09:30
480-121857-12	U-5D	Water	07/25/17 10:35	07/28/17 09:30
480-121857-13	D-5S2	Water	07/25/17 11:30	07/28/17 09:30
480-121857-14	D-5D	Water	07/25/17 12:10	07/28/17 09:30
480-121857-15	D-3S	Water	07/25/17 13:20	07/28/17 09:30
480-121857-16	D-3D	Water	07/25/17 13:40	07/28/17 09:30
480-121857-17	EQUIPMENT BLANK	Water	07/26/17 11:00	07/28/17 09:30
480-121857-18	DUP-1	Water	07/25/17 00:00	07/28/17 09:30
480-121857-19	DUP-2	Water	07/25/17 00:00	07/28/17 09:30
480-121857-20	FIELD BLANK 1	Water	07/25/17 11:00	07/28/17 09:30
480-121857-21	FIELD BLANK 2	Water	07/25/17 14:00	07/28/17 09:30

Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other:

TestAmerica Laboratories, Inc.

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

Project Manager: Ryan Van Dette  
Tell/Fax: \_\_\_\_\_  
Site Contact: Nathaniel Beineman  
Date: 7/25/17  
Carrier: \_\_\_\_\_  
COC No: \_\_\_\_\_ of \_\_\_\_\_ 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analytical Parameters									
						Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals)+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-1D	7/25/17	15:10	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-1S	7/25/17	14:25	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-2S	7/26/17	8:20	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-2D	7/26/17	8:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-4S	7/26/17	9:10	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-4D	7/26/17	9:35	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-8	7/26/17	9:55	Grab	Water	7	X	X	X	X	X	X	X	X	X	
D-9	7/26/17	10:40	Grab	Water	7	X	X	X	X	X	X	X	X	X	
Equipment Blank	7/26/17	11:00	Grab	Water	7	X	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Custody Seal No.: \_\_\_\_\_  
Company: *SKB*  
Date/Time: 7/26/17 15:00  
Relinquished by: *SKB*  
Company: *SKB*

Cooler Temp. (°C): Obs'd: \_\_\_\_\_  
Received by: *SKB*  
Date/Time: 7/26/17 15:00  
Company: *SKB*

Therm ID No.: \_\_\_\_\_  
Received in Laboratory by: *SKB*  
Date/Time: 7/26/17 15:00  
Company: *SKB*





Regulatory Program:  DW  NPDES  RCRA  Other: \_\_\_\_\_

Project Manager: Ryan Van Dette  
Site Contact: Nathaniel Beineman  
Date: 7/25/17  
Carrier: \_\_\_\_\_

Client Contact  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 6  
Site:  
P O # 3063 - 17 - 00945

Lab Contact:  
Metals (totals) + Mercury  
Radium 226 & 228 combined  
pH  
Sulfate  
Chloride  
Fluoride  
TDS

Analysis Turnaround Time  
WORKING DAYS  
CALENDAR DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Performs MS/MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
U-45	7/25/17	9:20	Grab	Water	7			X	X	X	X	X	X	X	
U-49	7/25/17	9:30	Grab	Water	7			X	X	X	X	X	X	X	
U-55	7/25/17	10:25	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #1	7/25/17	-	Grab	Water	7			X	X	X	X	X	X	X	
U-59	7/25/17	10:35	Grab	Water	7			X	X	X	X	X	X	X	
D-552	7/25/17	11:30	Grab	Water	7			X	X	X	X	X	X	X	
D-5D	7/25/17	12:10	Grab	Water	7			X	X	X	X	X	X	X	
D-35	7/25/17	13:20	Grab	Water	7			X	X	X	X	X	X	X	
D-3D	7/25/17	13:40	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #2	7/25/17	-	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank 1	7/25/17	11:00	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank 2	7/25/17	14:00	Grab	Water	7			X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Custody Seal No.: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_  
Custody Seal No.: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date/Time: 7/26/17 15:00  
Company: TA  
Date/Time: 7-26-17 11:00  
Company: TA  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_  
Cooler Temp (°C): Obs'd: \_\_\_\_\_  
Corr'd: \_\_\_\_\_  
Therm ID No.: \_\_\_\_\_  
Date/Time: 7-26-17 15:00  
Company: TA  
Date/Time: 7/28/17 09:30  
Company: TA  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PVI: VanDette, Ryan T	Carrier Tracking No(s): 480-36340-1						
Client Contact: Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	Page: Page 1 of 3						
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota	Job #: 480-121857-1						
Address: 13715 Rider Trail North, Earth City, MO, 63045		Due Date Requested: 8/9/2017	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)						
Phone: 314-298-8566 (Tel) 314-298-8757 (Fax)		TAT Requested (days):							
Email:		PO #:	Analysis Requested						
WO #:		Project #:							
Project Name: SKB Rosemount		SSOW#:	Total Number of containers						
Site: Rosemount									
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List	Special Instructions/Note:
D-1D (480-121857-1)	7/25/17	15:10 Central	Water	Water	X	X	X	X	
D-1S (480-121857-2)	7/25/17	14:25 Central	Water	Water	X	X	X	X	
D-2S (480-121857-3)	7/26/17	08:20 Central	Water	Water	X	X	X	X	
D-2D (480-121857-4)	7/26/17	08:40 Central	Water	Water	X	X	X	X	
D-4S (480-121857-5)	7/26/17	09:10 Central	Water	Water	X	X	X	X	
D-4D (480-121857-6)	7/26/17	09:35 Central	Water	Water	X	X	X	X	
D-8 (480-121857-7)	7/26/17	09:55 Central	Water	Water	X	X	X	X	
D-9 (480-121857-8)	7/26/17	10:40 Central	Water	Water	X	X	X	X	
U-4S (480-121857-9)	7/25/17	09:20 Central	Water	Water	X	X	X	X	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: *[Signature]* Date: 7/30/17  
 Relinquished by: \_\_\_\_\_ Date: 1300  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed by: *[Signature]* Company: TAB  
 Received by: *[Signature]* Company: Company  
 Received by: \_\_\_\_\_ Date/Time: 8/11/17  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

Method of Shipment: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_





<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	VanDette, Ryan T		480-36340.2
Company: TestAmerica Laboratories, Inc.		E-Mail:	ryan.vandette@testamericainc.com	State of Origin:	Page 2 of 3
Address: 13715 Rider Trail North,		Accreditations Required (See note): NELAP - Minnesota		Job #:	480-121857-1
City: Earth City		<b>Analysis Requested</b>		<b>Preservation Codes:</b>	
State, Zip: MO, 63045		Due Date Requested: 8/9/2017		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		TAT Requested (days):		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Email:		PO #:		Total Number of Containers	
WO #:		Project #: 48013709		903.0/PreSep_21 Standard Target List	
Site: Rosemount		SSOW#:		904.0/PreSep_0 Standard Target List	
		Sample Date		Field Filtered Sample (Yes or No)	
		Sample Time		Perform MS/MSD (Yes or No)	
		Sample Type (C=comp, G=grab)		94.0/PreSep_0 Standard Target List	
		Matrix (W=water, S=solid, O=wastewater, BT=liquid, A=air)		Total Number of Containers	
		Preservation Code:		Special Instructions/Note:	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date			
U-4D (480-121857-10)		7/25/17		X	
U-5S (480-121857-11)		7/25/17		X	
U-5D (480-121857-12)		7/25/17		X	
D-5S2 (480-121857-13)		7/25/17		X	
D-5D (480-121857-14)		7/25/17		X	
D-3S (480-121857-15)		7/25/17		X	
D-3D (480-121857-16)		7/25/17		X	
EQUIPMENT BLANK (480-121857-17)		7/26/17		X	
DUP-1 (480-121857-18)		7/25/17		X	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. |

<b>Possible Hazard Identification</b>		Special Instructions/QC Requirements:	
Unconfirmed		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	
Empty Kit Relinquished by:		Time:	
Relinquished by: <i>Captaine</i>		Date: 7/25/17 1300	
Relinquished by: <i>Captaine</i>		Date/Time: 7/25/17 1300	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks	



Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b> Client Contact: <u>VanDette, Ryan T</u> Shipping/Receiving: <u>ryan.vandette@testamericainc.com</u> Company: <u>TestAmerica Laboratories, Inc.</u>		Lab PM: <u>VanDette, Ryan T</u> E-Mail: <u>ryan.vandette@testamericainc.com</u>		Carrier Tracking No(s): <u>480-36340.3</u> State of Origin: <u>Minnesota</u> Page 3 of 3				
Address: <u>13715 Rider Trail North,</u> City: <u>Earth City</u> State, Zip: <u>MO, 63045</u> Phone: <u>314-298-8566(Tel) 314-298-8757(Fax)</u> Email: _____		Accreditations Required (See note): <u>NELAP - Minnesota</u>		Job #: <u>480-121857-1</u> Preservation Codes: M - Hexane N - None O - ASN02 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Ice V - MCAA W - pH 4-5 L - EDA Other: _____				
Due Date Requested: <u>8/9/2017</u> TAT Requested (days): _____		<b>Analysis Requested</b>						
PO #: _____ WO #: _____ Project #: <u>48013709</u> SSO#: _____		Total Number of containers: _____						
Sample Name: <u>SKB Rosemount</u> Site: <u>Rosemount</u>		<b>Special Instructions/Note:</b>						
Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sealed, On-wat, Soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List
DUP-2 (480-121857-19)	7/25/17	Central		Water	X	X	X	X
FIELD BLANK 1 (480-121857-20)	7/25/17	11:00 Central		Water	X	X	X	X
FIELD BLANK 2 (480-121857-21)	7/25/17	14:00 Central		Water	X	X	X	X
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.								
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Empty Kit Relinquished by: _____ Relinquished by: <u>VanDette</u> Relinquished by: _____ Relinquished by: _____		Special Instructions/QC Requirements: _____						
Custody Seal No.: _____ Δ Yes Δ No		Primary Deliverable Rank: 2						
Date: _____ Date/Time: _____ Date/Time: _____ Date/Time: _____		Method of Shipment: _____ Date/Time: _____ Date/Time: _____ Date/Time: _____						
Company: <u>TAS</u> Company: _____ Company: _____		Company: _____ Company: _____ Company: _____						
Cooler Temperature(s) °C and Other Remarks: _____		Cooler Temperature(s) °C and Other Remarks: _____						





# Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler: VanDette, Ryan T	Lab PM: VanDette, Ryan T	Carmer Tracking No(s): 480-36340.1	COC No: 480-36340.1	
Shipping/Receiving		Phone: ryan.vandette@testamericainc.com	E-Mail: ryan.vandette@testamericainc.com	State of Origin: Minnesota	Page: Page 1 of 3	
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota		Job #: 480-121857-1	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Z - other (specify)	
Address: 13715 Rider Trail North,		Due Date Requested: 8/9/2017		Analysis Requested		
City: Earth City		TAT Requested (days):		Total Number of Containers		
State, Zip: MO, 63045		PO #:		903.0/PreSep_21 Standard Target List		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		904.0/PreSep_0 Standard Target List		
Email:		Project #: 48013709		Perform MS/MSD (Yes or No)		
Site: Rosemount		SSOW#:		Field Filtered Sample (Yes or No)		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Preservation Code:	Special Instructions/Note:
D-1D (480-121857-1) ✓	7/25/17	15:10 Central		Water		3
D-1S (480-121857-2) ✓	7/25/17	14:25 Central		Water		3
D-2S (480-121857-3)	7/26/17	08:20 Central		Water		3
D-2D (480-121857-4) ✓	7/26/17	08:40 Central		Water		3
D-4S (480-121857-5)	7/26/17	09:10 Central		Water		3
D-4D (480-121857-6)	7/26/17	09:35 Central		Water		3
D-8 (480-121857-7)	7/26/17	09:55 Central		Water		3
D-9 (480-121857-8) ✓	7/26/17	10:40 Central		Water		3
U-4S (480-121857-9) ✓	7/25/17	09:20 Central		Water		3

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  
 Disposal By Lab \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: 7/31/17 1300  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 8/11/17  
 Relinquished by: \_\_\_\_\_ Date/Time: 0800  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Company: TAB Company: ASH  
 Company: \_\_\_\_\_ Company: \_\_\_\_\_  
 Company: \_\_\_\_\_ Company: \_\_\_\_\_





### Chain of Custody Record

Client Information (Sub Contract Lab)				Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving				Phone:		VanDette, Ryan T		State of Origin: Minnesota		480-36340.2	
Company: TestAmerica Laboratories, Inc.				Due Date Requested: 8/9/2017		E-Mail: ryan.vandette@testamericainc.com		Page: Page 2 of 3		Job #: 480-121857-1	
Address: 13715 Rider Trail North,				TAT Requested (days):		Accreditations Required (See note): NELAP - Minnesota		Analysis Requested		Preservation Codes:	
City: Earth City									A - HCl	M - Hexane	
State, Zip: MO, 63045									B - NaOH	N - None	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)									C - Zn Acetate	O - ASN02	
Email:									D - Nitric Acid	P - Na2O4S	
									E - NaHSO4	Q - Na2SO3	
Project Name: SKB Rosemount		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (H=water, S=solid, O=wastewater)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	F - MeOH	
Site: Rosemount										R - Na2S2O3	
Sample Identification - Client ID (Lab ID)										S - H2SO4	
U-4D (480-121857-10) ✓	7/25/17	09:30 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	H - Ascorbic Acid	
U-5S (480-121857-11) ✓	7/25/17	10:25 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	I - Ice	
U-5D (480-121857-12) ✓	7/25/17	10:35 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	J - DI Water	
D-5S2 (480-121857-13) ✓	7/25/17	11:30 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	K - EDTA	
D-5D (480-121857-14) - Missing	7/25/17	12:10 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	L - EDA	
D-3S (480-121857-15) ✓	7/25/17	13:20 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List	Other:	
D-3D (480-121857-16) ✓	7/25/17	13:40 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List		
EQUIPMENT BLANK (480-121857-17)	7/26/17	11:00 Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List		
DUP-1 (480-121857-18) ✓	7/25/17	Central	Water	Water	Water	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/PreSep_0 Standard Target List	903.0/PreSep_21 Standard Target List		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify)

Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by:

Relinquished by: *[Signature]* Date: 7/23/17 1300

Relinquished by: *[Signature]* Date: 8/11/17 0810

Relinquished by: *[Signature]* Date: \_\_\_\_\_

Company: TAS Company

Company: TASH Company

Company: \_\_\_\_\_

Custody Seals Intact  
 Yes  No  Δ

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:



<b>Client Information (Sub Contract Lab)</b>	Sampler: VanDette, Ryan T	Lab PM: VanDette, Ryan T	Carrier Tracking No(s): 480-36340.3		COC No: 480-36340.3			
Client Contact: Shipping/Receiving	Phone:	E-Mail: ryan.vandette@testamericainc.com	State of Origin: Minnesota		Page: Page 3 of 3			
Company: TestAmerica Laboratories, Inc.	Address: 13715 Rider Trail North,	Accreditations Required (See note): NELAP - Minnesota	Job #: 480-121857-1					
City: Earth City	State: MO, 63045	Due Date Requested: 8/9/2017	Preservation Codes:					
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:	TAT Requested (days):	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:					
Email:	WO #:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)					
Project Name: SKB Rosemount	Project #: 48013709		Analysis Requested:					
Site: Rosemount	SSOW#:		Total Number of Containers					
<b>Sample Identification - Client ID (Lab ID)</b>								
DUP-2 (480-121857-19)	7/25/17	Central	Water	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	903.0/PreSep_21 Standard Target List <input checked="" type="checkbox"/>	904.0/PreSep_0 Standard Target List <input checked="" type="checkbox"/>	3	Special Instructions/Note:
FIELD BLANK 1 (480-121857-20)	7/25/17	11:00 Central	Water	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	903.0/PreSep_21 Standard Target List <input checked="" type="checkbox"/>	904.0/PreSep_0 Standard Target List <input checked="" type="checkbox"/>	3	
FIELD BLANK 2 (480-121857-21)	7/25/17	14:00 Central	Water	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	903.0/PreSep_21 Standard Target List <input checked="" type="checkbox"/>	904.0/PreSep_0 Standard Target List <input checked="" type="checkbox"/>	3	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I								
<b>Possible Hazard Identification</b>								
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)								
Primary Deliverable Rank: 2								
Empty Kit Relinquished by:								
Relinquished by: <i>C. W. D. [Signature]</i>								
Relinquished by: <i>[Signature]</i>								
Relinquished by:								
Custody Seal No.:								
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:								
Date: 7/31/17 1300		Date: 8/1/17		Date: 8/1/17				
Company: TAS		Company: [Signature]		Company: [Signature]				
Date/Time:		Date/Time:		Date/Time:				
Date/Time:		Date/Time:		Date/Time:				
Company:		Company:		Company:				
Cooler Temperature(s) °C and Other Remarks:								





## CONDITION UPON RECEIPT FORM



Client: TA Buffalo

Initiated by Q Date: 8-2-17/8-1-17 Time: 0900 Shipper: Fed Ex Package Quantity: 6

\*Numbered shipping lines correspond to Numbered Cooler and Sample Temp lines

\*\*Sample must be received at < 6°- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Shipping #(s):*	Thermometer #:	Package Temp:**	Document #:
1. <u>5657 0122 6572</u>	1. <u>15</u>	1. <u>19.0</u>	1. _____
2. <u>     </u>	2. <u>15</u>	2. <u>19.0</u>	2. _____
3. <u>     </u>	3. <u>15</u>	3. <u>19.0</u>	3. _____
4. <u>     </u>	4. <u>15</u>	4. <u>19.0</u>	4. _____
5. <u>     </u>	5. <u>15</u>	5. <u>19.0</u>	5. _____
6. <u>     </u>	6. <u>15</u>	6. <u>19.0</u>	6. _____
7. _____	7. _____	7. _____	7. _____
8. _____	8. _____	8. _____	8. _____
9. _____	9. _____	9. _____	9. _____
10. _____	10. _____	10. _____	10. _____

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1. <input checked="" type="radio"/> Y <input type="radio"/> N	Are there custody seals present on the cooler?	8. <input type="radio"/> Y <input checked="" type="radio"/> N	Are there custody seals present on bottles?
2. <input type="radio"/> Y <input checked="" type="radio"/> N <input type="radio"/> N/A	Do custody seals on cooler appear to be tampered with?	9. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Do custody seals on bottles appear to be tampered with?
3. <input checked="" type="radio"/> Y <input type="radio"/> N	Were contents of cooler frisked after opening, but before unpacking?	10. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Was sample received with proper pH? (if not, make note below)
4. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received with Chain of Custody?	11. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Does the Chain of Custody match sample ID's on the container(s)?	12. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received in proper containers?
6. <input type="radio"/> Y <input checked="" type="radio"/> N	Was sample received broken?	13. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7. <input checked="" type="radio"/> Y <input type="radio"/> N	Is sample volume sufficient for analysis?	14. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Soil containers for C-14, H-3, Tc-99 & I-129/131 marked with "Do Not Dry" label?

<sup>1</sup> For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

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THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.



<b>Client Information (Sub Contract Lab)</b>		Lab #	310-10157.1
Client Contact: Muehling, Angela C		Page:	Page 1 of 1
Shipping/Receiving: angela.muehling@testamericainc.com		Job #:	310-111062-2
Company: TestAmerica Laboratories, Inc.		Preservation Codes:	
Address: 13715 Rider Trail North, Earth City, MO, 63045		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDTA Other:	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Email:		Total Number of containers	
Project Name: NPDES Permit Renewal		3	
Site:		Special Instructions/Note:	
Due Date Requested: 8/29/2017			
TAT Requested (days):			
PO #:			
WO #:			
Project # 31009171			
SSOW#:			
Sample Identification - Client ID (Lab ID)			
Sample Date	7/31/17	Field Filtered Sample (Yes or No)	X
Sample Time	08:00 Central	Perform MS/MSD (Yes or No)	X
Sample Type (C=Comp, G=grab)	Water	Radium-226 and Radium-228	X
Matrix (W=water, S=solid, O=wasteliq, BT=tissue, A=air)	Water	900.0/Evaporation Gross Alpha and Gross Beta	X
Preservation Code:		903.0/Presep_21 Radium 226	X
		904.0/Presep_0 Radium 228	X

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>T. Bell</i>	8/17	1556	
Relinquished by:			
Relinquished by:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Received by: <i>Dei Clark</i>	Date/Time: 8-2-17 0900	Company: TH STR
Custody Seal No.:	Received by:	Date/Time:	Company:
	Received by:	Date/Time:	Company:
	Cooler Temperature(s) °C and Other Remarks		





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-121857-2

**Login Number: 121857**

**List Source: TestAmerica Buffalo**

**List Number: 1**

**Creator: Janish, Carl M**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ges
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-121857-2

**Login Number: 121857**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 08/01/17 02:07 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0,19.0,19.0,19.0,19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-121857-2

**Login Number: 121857**

**List Number: 3**

**Creator: Clarke, Jill C**

**List Source: TestAmerica St. Louis**

**List Creation: 08/02/17 10:56 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0, 19.0, 19.0, 19.0, 19.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-122778-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

8/30/2017 10:25:18 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Job ID: 480-122778-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-122778-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 8/16/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 2.5° C, 2.6° C, 2.7° C, 2.9° C, 3.0° C and 3.1° C.

#### Receipt Exceptions

Incomplete sample ids were listed on coc, ids listed on sample containers were used for login: D-3S (480-122778-10) and D-3D (480-122778-11).

Sample id listed on coc as "D-2D" collected on 08/15/17 @ 09:20. Listed as "D-1D" collected on 08/15/17 @ 9:20 on sample containers. Info listed on container labels was used for login: D-1D (480-122778-14).

#### HPLC/IC

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: U-4S (480-122778-1), U-4D (480-122778-2), U-5S (480-122778-3), DUPLICATE #1 (480-122778-4), U-5D (480-122778-5), D-5S2 (480-122778-8), D-5D (480-122778-9), D-3S (480-122778-10), D-3D (480-122778-11), DUPLICATE #2 (480-122778-12), D-1S (480-122778-13), D-1D (480-122778-14), D-2S (480-122778-15), D-2D (480-122778-16), D-4S (480-122778-17), D-4D (480-122778-18), D-8 (480-122778-19) and D-9 (480-122778-20). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010C: The Total Chromium result reported for the following sample did not concur with results previously reported for this site: U-4S (480-122778-1). Reanalysis was performed, and the result confirmed.

Method(s) 6010C: The Total Boron result reported for the following sample did not concur with results previously reported for this site: D-1D (480-122778-14). Reanalysis was performed, and the result confirmed.

Method(s) 6020A: The Continuing Calibration Verification CCV 480-373696/13, CCV 480-373696/22, CCV 480-373696/35, and CCV 480-373696/45 recovered above the upper control limit for total Beryllium. The sample D-4S (480-122778-17), D-4D (480-122778-18), D-8 (480-122778-19), D-9 (480-122778-20), EQUIPMENT BLANK (480-122778-21) and (MB 480-372532/1-A) associated with these CCV's was non-detect for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: U-4S (480-122778-1), U-4D (480-122778-2), U-5S (480-122778-3), DUPLICATE #1 (480-122778-4), U-5D (480-122778-5), FIELD BLANK #1 (480-122778-6), FIELD BLANK #2 (480-122778-7), D-5S2 (480-122778-8), D-5D (480-122778-9), D-3S (480-122778-10), D-3D (480-122778-11), DUPLICATE #2 (480-122778-12), D-1S (480-122778-13), D-1D (480-122778-14), D-2S (480-122778-15), D-2D (480-122778-16), D-4S (480-122778-17), D-4D (480-122778-18), D-8 (480-122778-19), D-9 (480-122778-20) and EQUIPMENT BLANK (480-122778-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: U-4S

## Lab Sample ID: 480-122778-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.045		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	104		0.50		mg/L	1		6010C	Total/NA
Chromium	0.011		0.0040		mg/L	1		6010C	Total/NA
Chloride	55.6		1.0		mg/L	2		300.0	Total/NA
Sulfate	24.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	491		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.4	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-122778-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	88.2		0.50		mg/L	1		6010C	Total/NA
Chloride	37.0		1.0		mg/L	2		300.0	Total/NA
Sulfate	29.0		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	448		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-122778-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.065		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	89.9		0.50		mg/L	1		6010C	Total/NA
Chloride	45.3		1.0		mg/L	2		300.0	Total/NA
Sulfate	26.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	490		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUPLICATE #1

## Lab Sample ID: 480-122778-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.067		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	93.1		0.50		mg/L	1		6010C	Total/NA
Chloride	45.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	26.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	466		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: U-5D

## Lab Sample ID: 480-122778-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Calcium	85.1		0.50		mg/L	1		6010C	Total/NA
Chloride	27.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	30.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	427		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK #1

## Lab Sample ID: 480-122778-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK #2

## Lab Sample ID: 480-122778-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	5.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-122778-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.076		0.0020		mg/L	1		6010C	Total/NA
Boron	0.058		0.020		mg/L	1		6010C	Total/NA
Calcium	119		0.50		mg/L	1		6010C	Total/NA
Chloride	48.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	47.9		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	614		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-122778-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Calcium	95.1		0.50		mg/L	1		6010C	Total/NA
Chloride	22.4		1.0		mg/L	2		300.0	Total/NA
Sulfate	32.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	467		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-122778-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-3S (Continued)

## Lab Sample ID: 480-122778-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.079		0.020		mg/L	1		6010C	Total/NA
Calcium	104		0.50		mg/L	1		6010C	Total/NA
Chloride	62.9		2.5		mg/L	5		300.0	Total/NA
Sulfate	47.7		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	538		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	20.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-122778-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.025		0.020		mg/L	1		6010C	Total/NA
Calcium	97.9		0.50		mg/L	1		6010C	Total/NA
Chloride	32.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	33.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	463		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	20.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUPLICATE #2

## Lab Sample ID: 480-122778-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.025		0.020		mg/L	1		6010C	Total/NA
Calcium	96.8		0.50		mg/L	1		6010C	Total/NA
Chloride	31.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	32.9		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	481		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1S

## Lab Sample ID: 480-122778-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.059		0.0020		mg/L	1		6010C	Total/NA
Boron	0.045		0.020		mg/L	1		6010C	Total/NA
Calcium	107		0.50		mg/L	1		6010C	Total/NA
Chloride	32.4		2.5		mg/L	5		300.0	Total/NA
Sulfate	28.1		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	509		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-122778-14

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-1D (Continued)

## Lab Sample ID: 480-122778-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Boron	0.020		0.020		mg/L	1		6010C	Total/NA
Calcium	88.4		0.50		mg/L	1		6010C	Total/NA
Chloride	38.5		1.0		mg/L	2		300.0	Total/NA
Sulfate	29.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	442		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.5	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-122778-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	98.9		0.50		mg/L	1		6010C	Total/NA
Chloride	44.6		2.5		mg/L	5		300.0	Total/NA
Sulfate	29.0		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	483		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-122778-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Calcium	86.5		0.50		mg/L	1		6010C	Total/NA
Chloride	31.3		1.0		mg/L	2		300.0	Total/NA
Sulfate	25.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	445		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-122778-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.069		0.0020		mg/L	1		6010C	Total/NA
Calcium	92.8		0.50		mg/L	1		6010C	Total/NA
Chloride	43.9		1.0		mg/L	2		300.0	Total/NA
Sulfate	28.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	467		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-122778-18

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-4D (Continued)

## Lab Sample ID: 480-122778-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.058		0.0020		mg/L	1		6010C	Total/NA
Calcium	92.8		0.50		mg/L	1		6010C	Total/NA
Chloride	43.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	469		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-122778-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.046		0.0020		mg/L	1		6010C	Total/NA
Calcium	66.9		0.50		mg/L	1		6010C	Total/NA
Cobalt	0.54		0.30		ug/L	1		6020A	Total/NA
Chloride	16.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	33.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	342		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-122778-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.057		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	91.8		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0057		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.53		0.30		ug/L	1		6020A	Total/NA
Chloride	41.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	24.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	452		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-122778-21

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	21.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: U-4S**  
**Date Collected: 08/14/17 10:55**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.045		0.0020		mg/L		08/18/17 08:37	08/22/17 04:02	1
Boron	0.022		0.020		mg/L		08/18/17 08:37	08/22/17 04:02	1
Calcium	104		0.50		mg/L		08/18/17 08:37	08/22/17 04:02	1
Chromium	0.011		0.0040		mg/L		08/18/17 08:37	08/22/17 04:02	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:02	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:02	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:36	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:36	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 13:36	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 13:36	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 13:36	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:36	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:36	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 13:36	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:27	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55.6		1.0		mg/L			08/22/17 18:57	2
Fluoride	ND		0.10		mg/L			08/22/17 18:57	2
Sulfate	24.3		4.0		mg/L			08/22/17 18:57	2
Total Dissolved Solids	491		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 19:45	1
Temperature	21.4	HF	0.001		Degrees C			08/17/17 19:45	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: U-4D**  
**Date Collected: 08/14/17 11:05**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		08/18/17 08:37	08/22/17 04:06	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 04:06	1
<b>Calcium</b>	<b>88.2</b>		0.50		mg/L		08/18/17 08:37	08/22/17 04:06	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:06	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:06	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:06	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:42	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:42	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 13:42	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 13:42	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 13:42	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:42	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:42	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 13:42	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:28	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>37.0</b>		1.0		mg/L			08/22/17 19:05	2
Fluoride	ND		0.10		mg/L			08/22/17 19:05	2
<b>Sulfate</b>	<b>29.0</b>		4.0		mg/L			08/22/17 19:05	2
<b>Total Dissolved Solids</b>	<b>448</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			08/17/17 19:48	1
<b>Temperature</b>	<b>21.2</b>	<b>HF</b>	0.001		Degrees C			08/17/17 19:48	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: U-5S**  
**Date Collected: 08/14/17 11:50**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.065		0.0020		mg/L		08/18/17 08:37	08/22/17 04:20	1
Boron	0.022		0.020		mg/L		08/18/17 08:37	08/22/17 04:20	1
Calcium	89.9		0.50		mg/L		08/18/17 08:37	08/22/17 04:20	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:20	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:20	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:20	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:47	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:47	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 13:47	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 13:47	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 13:47	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:47	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:47	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 13:47	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:35	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.3		1.0		mg/L			08/22/17 19:13	2
Fluoride	ND		0.10		mg/L			08/22/17 19:13	2
Sulfate	26.2		4.0		mg/L			08/22/17 19:13	2
Total Dissolved Solids	490		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 19:51	1
Temperature	21.0	HF	0.001		Degrees C			08/17/17 19:51	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-122778-4**

**Date Collected: 08/14/17 00:00**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.067		0.0020		mg/L		08/18/17 08:37	08/22/17 04:24	1
Boron	0.022		0.020		mg/L		08/18/17 08:37	08/22/17 04:24	1
Calcium	93.1		0.50		mg/L		08/18/17 08:37	08/22/17 04:24	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:24	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:24	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:39	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:39	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 14:39	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 14:39	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 14:39	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:39	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:39	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 14:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.8		1.0		mg/L			08/22/17 19:21	2
Fluoride	ND		0.10		mg/L			08/22/17 19:21	2
Sulfate	26.3		4.0		mg/L			08/22/17 19:21	2
Total Dissolved Solids	466		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 19:54	1
Temperature	21.0	HF	0.001		Degrees C			08/17/17 19:54	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: U-5D**  
**Date Collected: 08/14/17 12:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.057</b>		0.0020		mg/L		08/18/17 08:37	08/22/17 04:27	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 04:27	1
<b>Calcium</b>	<b>85.1</b>		0.50		mg/L		08/18/17 08:37	08/22/17 04:27	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:27	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:27	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:27	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:44	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:44	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 14:44	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 14:44	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 14:44	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:44	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:44	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 14:44	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:38	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>27.4</b>		1.0		mg/L			08/22/17 20:02	2
Fluoride	ND		0.10		mg/L			08/22/17 20:02	2
<b>Sulfate</b>	<b>30.3</b>		4.0		mg/L			08/22/17 20:02	2
<b>Total Dissolved Solids</b>	<b>427</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			08/17/17 19:57	1
<b>Temperature</b>	<b>21.0</b>	<b>HF</b>	0.001		Degrees C			08/17/17 19:57	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-122778-6**

**Date Collected: 08/14/17 12:40**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/18/17 08:37	08/22/17 04:45	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 04:45	1
Calcium	ND		0.50		mg/L		08/18/17 08:37	08/22/17 04:45	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:45	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:45	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:45	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:50	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:50	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 14:50	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 14:50	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 14:50	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:50	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:50	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 14:50	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/22/17 20:10	1
Fluoride	ND		0.050		mg/L			08/22/17 20:10	1
Sulfate	ND		2.0		mg/L			08/22/17 20:10	1
Total Dissolved Solids	ND		10.0		mg/L			08/16/17 18:25	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.6	HF	0.1		SU			08/17/17 20:03	1
Temperature	21.3	HF	0.001		Degrees C			08/17/17 20:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-122778-7**

**Date Collected: 08/14/17 12:45**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/18/17 08:37	08/22/17 04:48	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 04:48	1
Calcium	ND		0.50		mg/L		08/18/17 08:37	08/22/17 04:48	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 04:48	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 04:48	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 04:48	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:55	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:55	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 14:55	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 14:55	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 14:55	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:55	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 14:55	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 14:55	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/22/17 20:18	1
Fluoride	ND		0.050		mg/L			08/22/17 20:18	1
Sulfate	ND		2.0		mg/L			08/22/17 20:18	1
Total Dissolved Solids	ND		10.0		mg/L			08/16/17 18:25	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.8	HF	0.1		SU			08/17/17 20:05	1
Temperature	21.1	HF	0.001		Degrees C			08/17/17 20:05	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-5S2**  
**Date Collected: 08/14/17 13:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-8**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.076		0.0020		mg/L		08/18/17 08:37	08/22/17 05:03	1
Boron	0.058		0.020		mg/L		08/18/17 08:37	08/22/17 05:03	1
Calcium	119		0.50		mg/L		08/18/17 08:37	08/22/17 05:03	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:03	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:03	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:03	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:01	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:01	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:01	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:01	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:01	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:01	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:01	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:01	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:47	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.6		2.5		mg/L			08/22/17 20:27	5
Fluoride	ND		0.25		mg/L			08/22/17 20:27	5
Sulfate	47.9		10.0		mg/L			08/22/17 20:27	5
Total Dissolved Solids	614		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:08	1
Temperature	21.0	HF	0.001		Degrees C			08/17/17 20:08	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-5D**  
**Date Collected: 08/14/17 14:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-9**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.053</b>		0.0020		mg/L		08/18/17 08:37	08/22/17 05:06	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 05:06	1
<b>Calcium</b>	<b>95.1</b>		0.50		mg/L		08/18/17 08:37	08/22/17 05:06	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:06	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:06	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:06	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:06	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:06	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:06	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:06	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:06	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:06	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:06	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:06	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:49	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>22.4</b>		1.0		mg/L			08/22/17 20:35	2
Fluoride	ND		0.10		mg/L			08/22/17 20:35	2
<b>Sulfate</b>	<b>32.4</b>		4.0		mg/L			08/22/17 20:35	2
<b>Total Dissolved Solids</b>	<b>467</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			08/17/17 20:11	1
<b>Temperature</b>	<b>21.0</b>	<b>HF</b>	0.001		Degrees C			08/17/17 20:11	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-3S**  
**Date Collected: 08/14/17 14:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-10**  
**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		08/18/17 08:37	08/22/17 05:10	1
Boron	0.079		0.020		mg/L		08/18/17 08:37	08/22/17 05:10	1
Calcium	104		0.50		mg/L		08/18/17 08:37	08/22/17 05:10	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:10	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:10	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:10	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:12	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:12	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:12	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:12	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:12	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:12	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:12	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:12	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.9		2.5		mg/L			08/22/17 20:43	5
Fluoride	ND		0.25		mg/L			08/22/17 20:43	5
Sulfate	47.7		10.0		mg/L			08/22/17 20:43	5
Total Dissolved Solids	538		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:14	1
Temperature	20.9	HF	0.001		Degrees C			08/17/17 20:14	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-3D**  
**Date Collected: 08/14/17 14:40**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		08/18/17 08:37	08/22/17 05:13	1
Boron	0.025		0.020		mg/L		08/18/17 08:37	08/22/17 05:13	1
Calcium	97.9		0.50		mg/L		08/18/17 08:37	08/22/17 05:13	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:13	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:13	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:13	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:17	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:17	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:17	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:17	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:17	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:17	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:17	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:53	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.2		1.0		mg/L			08/22/17 20:51	2
Fluoride	ND		0.10		mg/L			08/22/17 20:51	2
Sulfate	33.4		4.0		mg/L			08/22/17 20:51	2
Total Dissolved Solids	463		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:17	1
Temperature	20.9	HF	0.001		Degrees C			08/17/17 20:17	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-122778-12**

**Date Collected: 08/14/17 00:00**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		08/18/17 08:37	08/22/17 05:17	1
Boron	0.025		0.020		mg/L		08/18/17 08:37	08/22/17 05:17	1
Calcium	96.8		0.50		mg/L		08/18/17 08:37	08/22/17 05:17	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:17	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:17	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:17	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:23	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:23	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:23	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:23	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:23	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:23	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:23	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:23	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:55	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.7		1.0		mg/L			08/22/17 20:59	2
Fluoride	ND		0.10		mg/L			08/22/17 20:59	2
Sulfate	32.9		4.0		mg/L			08/22/17 20:59	2
Total Dissolved Solids	481		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:20	1
Temperature	21.0	HF	0.001		Degrees C			08/17/17 20:20	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-1S**

**Date Collected: 08/15/17 08:45**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-13**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.059		0.0020		mg/L		08/18/17 08:37	08/22/17 05:21	1
Boron	0.045		0.020		mg/L		08/18/17 08:37	08/22/17 05:21	1
Calcium	107		0.50		mg/L		08/18/17 08:37	08/22/17 05:21	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:21	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:21	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:21	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:46	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:46	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:46	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:46	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:46	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:46	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:46	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:46	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.4		2.5		mg/L			08/22/17 21:07	5
Fluoride	ND		0.25		mg/L			08/22/17 21:07	5
Sulfate	28.1		10.0		mg/L			08/22/17 21:07	5
Total Dissolved Solids	509		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:23	1
Temperature	21.3	HF	0.001		Degrees C			08/17/17 20:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-1D**  
**Date Collected: 08/15/17 09:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.051		0.0020		mg/L		08/18/17 08:37	08/22/17 05:24	1
Boron	0.020		0.020		mg/L		08/18/17 08:37	08/25/17 14:13	1
Calcium	88.4		0.50		mg/L		08/18/17 08:37	08/22/17 05:24	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:24	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:24	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:52	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:52	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:52	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:52	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:52	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:52	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:52	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:52	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:59	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.5		1.0		mg/L			08/22/17 21:56	2
Fluoride	ND		0.10		mg/L			08/22/17 21:56	2
Sulfate	29.6		4.0		mg/L			08/22/17 21:56	2
Total Dissolved Solids	442		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			08/17/17 20:26	1
Temperature	21.5	HF	0.001		Degrees C			08/17/17 20:26	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-2S**

**Date Collected: 08/15/17 09:55**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-15**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.050		0.0020		mg/L		08/18/17 08:37	08/22/17 05:28	1
Boron	0.023		0.020		mg/L		08/18/17 08:37	08/22/17 05:28	1
Calcium	98.9		0.50		mg/L		08/18/17 08:37	08/22/17 05:28	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:28	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:28	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:28	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:57	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:57	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 15:57	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 15:57	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 15:57	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:57	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 15:57	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 15:57	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.6		2.5		mg/L			08/22/17 22:04	5
Fluoride	ND		0.25		mg/L			08/22/17 22:04	5
Sulfate	29.0		10.0		mg/L			08/22/17 22:04	5
Total Dissolved Solids	483		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			08/17/17 20:29	1
Temperature	21.3	HF	0.001		Degrees C			08/17/17 20:29	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-2D**  
**Date Collected: 08/15/17 10:18**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-16**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.051</b>		0.0020		mg/L		08/18/17 08:37	08/22/17 05:31	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 05:31	1
<b>Calcium</b>	<b>86.5</b>		0.50		mg/L		08/18/17 08:37	08/22/17 05:31	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:31	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:31	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:31	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 16:03	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 16:03	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 16:03	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 16:03	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 16:03	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 16:03	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 16:03	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 16:03	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:06	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>31.3</b>		1.0		mg/L			08/22/17 22:12	2
Fluoride	ND		0.10		mg/L			08/22/17 22:12	2
<b>Sulfate</b>	<b>25.2</b>		4.0		mg/L			08/22/17 22:12	2
<b>Total Dissolved Solids</b>	<b>445</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			08/17/17 20:34	1
<b>Temperature</b>	<b>21.0</b>	<b>HF</b>	0.001		Degrees C			08/17/17 20:34	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-4S**  
**Date Collected: 08/15/17 10:40**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-17**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.069</b>		0.0020		mg/L		08/18/17 08:37	08/22/17 05:46	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 05:46	1
<b>Calcium</b>	<b>92.8</b>		0.50		mg/L		08/18/17 08:37	08/22/17 05:46	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 05:46	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 05:46	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 05:46	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:04	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:04	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 22:04	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 22:04	1
Cobalt	ND		0.30		ug/L		08/17/17 08:14	08/23/17 22:04	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:04	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:04	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 22:04	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43.9</b>		1.0		mg/L			08/22/17 22:20	2
Fluoride	ND		0.10		mg/L			08/22/17 22:20	2
<b>Sulfate</b>	<b>28.2</b>		4.0		mg/L			08/22/17 22:20	2
<b>Total Dissolved Solids</b>	<b>467</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.6</b>	<b>HF</b>	0.1		SU			08/17/17 20:40	1
<b>Temperature</b>	<b>21.0</b>	<b>HF</b>	0.001		Degrees C			08/17/17 20:40	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-4D**  
**Date Collected: 08/15/17 11:05**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-18**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.058</b>		0.0020		mg/L		08/18/17 08:37	08/18/17 16:01	1
Boron	ND		0.020		mg/L		08/28/17 09:18	08/28/17 15:04	1
<b>Calcium</b>	<b>92.8</b>		0.50		mg/L		08/18/17 08:37	08/18/17 16:01	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/18/17 16:01	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/18/17 16:01	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/18/17 16:01	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:09	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:09	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 22:09	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 22:09	1
Cobalt	ND		0.30		ug/L		08/17/17 08:14	08/23/17 22:09	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:09	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:09	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 22:09	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43.2</b>		1.0		mg/L			08/22/17 22:29	2
Fluoride	ND		0.10		mg/L			08/22/17 22:29	2
<b>Sulfate</b>	<b>27.7</b>		4.0		mg/L			08/22/17 22:29	2
<b>Total Dissolved Solids</b>	<b>469</b>		10.0		mg/L			08/16/17 18:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			08/17/17 20:42	1
<b>Temperature</b>	<b>21.2</b>	<b>HF</b>	0.001		Degrees C			08/17/17 20:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-8**

**Date Collected: 08/15/17 11:30**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-19**

**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.046</b>		0.0020		mg/L		08/18/17 08:37	08/18/17 16:04	1
Boron	ND		0.020		mg/L		08/28/17 09:18	08/28/17 15:01	1
<b>Calcium</b>	<b>66.9</b>		0.50		mg/L		08/18/17 08:37	08/18/17 16:04	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/18/17 16:04	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/18/17 16:04	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/18/17 16:04	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:15	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:15	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 22:15	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 22:15	1
<b>Cobalt</b>	<b>0.54</b>		0.30		ug/L		08/17/17 08:14	08/23/17 22:15	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:15	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:15	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 22:15	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:12	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>16.7</b>		1.0		mg/L			08/22/17 22:37	2
Fluoride	ND		0.10		mg/L			08/22/17 22:37	2
<b>Sulfate</b>	<b>33.6</b>		4.0		mg/L			08/22/17 22:37	2
<b>Total Dissolved Solids</b>	<b>342</b>		10.0		mg/L			08/16/17 18:35	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.9</b>	<b>HF</b>	0.1		SU			08/17/17 20:45	1
<b>Temperature</b>	<b>21.3</b>	<b>HF</b>	0.001		Degrees C			08/17/17 20:45	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: D-9**

**Date Collected: 08/15/17 12:10**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-20**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.057		0.0020		mg/L		08/18/17 08:37	08/18/17 16:08	1
Boron	0.021		0.020		mg/L		08/18/17 08:37	08/18/17 16:08	1
Calcium	91.8		0.50		mg/L		08/18/17 08:37	08/18/17 16:08	1
Chromium	0.0057		0.0040		mg/L		08/18/17 08:37	08/18/17 16:08	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/18/17 16:08	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/18/17 16:08	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:20	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:20	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 22:20	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 22:20	1
Cobalt	0.53		0.30		ug/L		08/17/17 08:14	08/23/17 22:20	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:20	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:20	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 22:20	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 13:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.7		1.0		mg/L			08/22/17 23:17	2
Fluoride	ND		0.10		mg/L			08/22/17 23:17	2
Sulfate	24.6		4.0		mg/L			08/22/17 23:17	2
Total Dissolved Solids	452		10.0		mg/L			08/16/17 18:35	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			08/17/17 20:47	1
Temperature	21.1	HF	0.001		Degrees C			08/17/17 20:47	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-122778-21**

**Date Collected: 08/15/17 12:30**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/18/17 08:37	08/18/17 16:11	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/18/17 16:11	1
Calcium	ND		0.50		mg/L		08/18/17 08:37	08/18/17 16:11	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/18/17 16:11	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/18/17 16:11	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/18/17 16:11	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:26	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:26	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 22:26	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 22:26	1
Cobalt	ND		0.30		ug/L		08/17/17 08:14	08/23/17 22:26	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:26	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 22:26	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 22:26	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 07:48	08/17/17 13:19	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/22/17 23:26	1
Fluoride	ND		0.050		mg/L			08/22/17 23:26	1
Sulfate	ND		2.0		mg/L			08/22/17 23:26	1
Total Dissolved Solids	ND		10.0		mg/L			08/16/17 18:35	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.1	HF	0.1		SU			08/17/17 20:50	1
Temperature	21.2	HF	0.001		Degrees C			08/17/17 20:50	1

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-372653/1-A**  
**Matrix: Water**  
**Analysis Batch: 373056**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372653**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/18/17 08:37	08/18/17 15:53	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/18/17 15:53	1
Calcium	ND		0.50		mg/L		08/18/17 08:37	08/18/17 15:53	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/18/17 15:53	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/18/17 15:53	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/18/17 15:53	1

**Lab Sample ID: LCS 480-372653/2-A**  
**Matrix: Water**  
**Analysis Batch: 373056**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372653**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.197		mg/L		98	80 - 120
Boron	0.200	0.201		mg/L		100	80 - 120
Calcium	10.0	9.83		mg/L		98	80 - 120
Chromium	0.200	0.199		mg/L		99	80 - 120
Lead	0.200	0.197		mg/L		99	80 - 120

**Lab Sample ID: MB 480-372657/1-A**  
**Matrix: Water**  
**Analysis Batch: 373489**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372657**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/18/17 08:37	08/22/17 03:55	1
Boron	ND		0.020		mg/L		08/18/17 08:37	08/22/17 03:55	1
Calcium	ND		0.50		mg/L		08/18/17 08:37	08/22/17 03:55	1
Chromium	ND		0.0040		mg/L		08/18/17 08:37	08/22/17 03:55	1
Lead	ND		0.010		mg/L		08/18/17 08:37	08/22/17 03:55	1
Lithium	ND		0.030		mg/L		08/18/17 08:37	08/22/17 03:55	1

**Lab Sample ID: LCS 480-372657/2-A**  
**Matrix: Water**  
**Analysis Batch: 373489**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372657**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.219		mg/L		109	80 - 120
Boron	0.200	0.211		mg/L		106	80 - 120
Calcium	10.0	9.91		mg/L		99	80 - 120
Chromium	0.200	0.217		mg/L		109	80 - 120
Lead	0.200	0.204		mg/L		102	80 - 120

**Lab Sample ID: 480-122778-5 MS**  
**Matrix: Water**  
**Analysis Batch: 373489**

**Client Sample ID: U-5D**  
**Prep Type: Total/NA**  
**Prep Batch: 372657**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.057		0.200	0.279		mg/L		111	75 - 125
Boron	ND		0.200	0.231		mg/L		106	75 - 125
Calcium	85.1		10.0	100.8	4	mg/L		157	75 - 125

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 480-122778-5 MS**

**Matrix: Water**

**Analysis Batch: 373489**

**Client Sample ID: U-5D**

**Prep Type: Total/NA**

**Prep Batch: 372657**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chromium	ND		0.200	0.218		mg/L		109	75 - 125
Lead	ND		0.200	0.212		mg/L		106	75 - 125

**Lab Sample ID: 480-122778-5 MSD**

**Matrix: Water**

**Analysis Batch: 373489**

**Client Sample ID: U-5D**

**Prep Type: Total/NA**

**Prep Batch: 372657**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.057		0.200	0.276		mg/L		109	75 - 125	1	20
Boron	ND		0.200	0.231		mg/L		106	75 - 125	0	20
Calcium	85.1		10.0	95.92	4	mg/L		108	75 - 125	5	20
Chromium	ND		0.200	0.217		mg/L		109	75 - 125	0	20
Lead	ND		0.200	0.211		mg/L		105	75 - 125	1	20

**Lab Sample ID: MB 480-374152/1-A**

**Matrix: Water**

**Analysis Batch: 374381**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 374152**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		08/28/17 09:18	08/28/17 14:39	1
Boron	ND		0.020		mg/L		08/28/17 09:18	08/28/17 14:39	1
Calcium	ND		0.50		mg/L		08/28/17 09:18	08/28/17 14:39	1
Chromium	ND		0.0040		mg/L		08/28/17 09:18	08/28/17 14:39	1
Lead	ND		0.010		mg/L		08/28/17 09:18	08/28/17 14:39	1
Lithium	ND		0.030		mg/L		08/28/17 09:18	08/28/17 14:39	1

**Lab Sample ID: LCS 480-374152/2-A**

**Matrix: Water**

**Analysis Batch: 374381**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 374152**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.200	0.204		mg/L		102	80 - 120
Boron	0.200	0.209		mg/L		105	80 - 120
Calcium	10.0	9.98		mg/L		100	80 - 120
Chromium	0.200	0.207		mg/L		103	80 - 120
Lead	0.200	0.203		mg/L		102	80 - 120

**Lab Sample ID: LCSD 480-374152/3-A**

**Matrix: Water**

**Analysis Batch: 374381**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 374152**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.200	0.204		mg/L		102	80 - 120	0	20
Boron	0.200	0.209		mg/L		104	80 - 120	0	20
Calcium	10.0	9.91		mg/L		99	80 - 120	1	20
Chromium	0.200	0.203		mg/L		101	80 - 120	2	20
Lead	0.200	0.202		mg/L		101	80 - 120	1	20

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# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-372529/1-A**  
**Matrix: Water**  
**Analysis Batch: 373509**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372529**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:25	1
Arsenic	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:25	1
Beryllium	ND		0.70		ug/L		08/17/17 08:12	08/22/17 13:25	1
Cadmium	ND		0.50		ug/L		08/17/17 08:12	08/22/17 13:25	1
Cobalt	ND		0.30		ug/L		08/17/17 08:12	08/22/17 13:25	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:25	1
Selenium	ND		1.0		ug/L		08/17/17 08:12	08/22/17 13:25	1
Thallium	ND		0.20		ug/L		08/17/17 08:12	08/22/17 13:25	1

**Lab Sample ID: LCS 480-372529/2-A**  
**Matrix: Water**  
**Analysis Batch: 373509**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372529**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.18		ug/L		96	80 - 120
Arsenic	20.0	18.33		ug/L		92	80 - 120
Beryllium	20.0	20.59		ug/L		103	80 - 120
Cadmium	20.0	19.35		ug/L		97	80 - 120
Cobalt	20.0	19.82		ug/L		99	80 - 120
Molybdenum	20.0	18.95		ug/L		95	80 - 120
Selenium	20.0	18.35		ug/L		92	80 - 120
Thallium	20.0	20.73		ug/L		104	80 - 120

**Lab Sample ID: 480-122778-3 MS**  
**Matrix: Water**  
**Analysis Batch: 373509**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 372529**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	19.58		ug/L		98	75 - 125
Arsenic	ND		20.0	19.93		ug/L		100	75 - 125
Beryllium	ND		20.0	20.64		ug/L		103	75 - 125
Cadmium	ND		20.0	18.70		ug/L		93	75 - 125
Cobalt	ND		20.0	18.64		ug/L		92	75 - 125
Molybdenum	ND		20.0	19.17		ug/L		94	75 - 125
Selenium	ND		20.0	19.00		ug/L		90	75 - 125
Thallium	ND		20.0	20.42		ug/L		102	75 - 125

**Lab Sample ID: 480-122778-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 373509**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 372529**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	19.57		ug/L		98	75 - 125	0	20
Arsenic	ND		20.0	19.48		ug/L		97	75 - 125	2	20
Beryllium	ND		20.0	20.42		ug/L		102	75 - 125	1	20
Cadmium	ND		20.0	19.16		ug/L		96	75 - 125	2	20
Cobalt	ND		20.0	19.44		ug/L		96	75 - 125	4	20
Molybdenum	ND		20.0	19.55		ug/L		96	75 - 125	2	20
Selenium	ND		20.0	19.45		ug/L		93	75 - 125	2	20

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: 480-122778-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 373509**

**Client Sample ID: U-5S**  
**Prep Type: Total/NA**  
**Prep Batch: 372529**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	ND		20.0	20.19		ug/L		101	75 - 125	1	20

**Lab Sample ID: MB 480-372532/1-A**  
**Matrix: Water**  
**Analysis Batch: 373696**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372532**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		08/17/17 08:14	08/23/17 19:55	1
Arsenic	ND		1.0		ug/L		08/17/17 08:14	08/23/17 19:55	1
Beryllium	ND	^	0.70		ug/L		08/17/17 08:14	08/23/17 19:55	1
Cadmium	ND		0.50		ug/L		08/17/17 08:14	08/23/17 19:55	1
Cobalt	ND		0.30		ug/L		08/17/17 08:14	08/23/17 19:55	1
Molybdenum	ND		1.0		ug/L		08/17/17 08:14	08/23/17 19:55	1
Selenium	ND		1.0		ug/L		08/17/17 08:14	08/23/17 19:55	1
Thallium	ND		0.20		ug/L		08/17/17 08:14	08/23/17 19:55	1

**Lab Sample ID: LCS 480-372532/2-A**  
**Matrix: Water**  
**Analysis Batch: 373696**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372532**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	20.0	18.70		ug/L		93	80 - 120
Arsenic	20.0	18.85		ug/L		94	80 - 120
Cadmium	20.0	19.22		ug/L		96	80 - 120
Cobalt	20.0	20.33		ug/L		102	80 - 120
Molybdenum	20.0	20.12		ug/L		101	80 - 120
Selenium	20.0	18.89		ug/L		94	80 - 120
Thallium	20.0	19.85		ug/L		99	80 - 120

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-372526/1-A**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372526**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 09:30	08/17/17 12:23	1

**Lab Sample ID: LCS 480-372526/2-A**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372526**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	6.67	6.22		ug/L		93	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: 480-122778-2 MS**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.23		ug/L		93	80 - 120

**Lab Sample ID: 480-122778-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		6.67	6.28		ug/L		94	80 - 120	1	20

**Lab Sample ID: MB 480-372528/1-A**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 372528**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		08/17/17 07:48	08/17/17 13:16	1

**Lab Sample ID: LCS 480-372528/2-A**  
**Matrix: Water**  
**Analysis Batch: 372678**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 372528**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.25		ug/L		94	80 - 120

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-373329/28**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/22/17 21:48	1
Fluoride	ND		0.050		mg/L			08/22/17 21:48	1
Sulfate	ND		2.0		mg/L			08/22/17 21:48	1

**Lab Sample ID: MB 480-373329/4**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			08/22/17 18:33	1
Fluoride	ND		0.050		mg/L			08/22/17 18:33	1
Sulfate	ND		2.0		mg/L			08/22/17 18:33	1

**Lab Sample ID: LCS 480-373329/27**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chloride	50.0	48.83		mg/L		98	90 - 110

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 480-373329/27**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.00	4.94		mg/L		99	90 - 110
Sulfate	50.0	50.57		mg/L		101	90 - 110

**Lab Sample ID: LCS 480-373329/3**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	48.67		mg/L		97	90 - 110
Fluoride	5.00	4.92		mg/L		98	90 - 110
Sulfate	50.0	50.27		mg/L		101	90 - 110

**Lab Sample ID: 480-122778-4 MS**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: DUPLICATE #1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	45.8		100	141.0		mg/L		95	81 - 120
Fluoride	ND		10.0	9.97		mg/L		99	82 - 120
Sulfate	26.3		100	126.2		mg/L		100	80 - 120

**Lab Sample ID: 480-122778-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: DUPLICATE #1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	45.8		100	140.5		mg/L		95	81 - 120	0	20
Fluoride	ND		10.0	9.93		mg/L		98	82 - 120	0	20
Sulfate	26.3		100	126.1		mg/L		100	80 - 120	0	20

**Lab Sample ID: 480-122778-13 MS**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	32.4		250	275.5		mg/L		97	81 - 120
Fluoride	ND		25.0	24.76		mg/L		99	82 - 120
Sulfate	28.1		250	281.2		mg/L		101	80 - 120

**Lab Sample ID: 480-122778-19 MS**  
**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: D-8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.7		100	115.4		mg/L		99	81 - 120
Fluoride	ND		10.0	10.04		mg/L		100	82 - 120
Sulfate	33.6		100	136.3		mg/L		103	80 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-122778-19 MSD**

**Matrix: Water**  
**Analysis Batch: 373329**

**Client Sample ID: D-8**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	16.7		100	116.1		mg/L		99	81 - 120	1	20
Fluoride	ND		10.0	10.08		mg/L		100	82 - 120	0	20
Sulfate	33.6		100	137.1		mg/L		103	80 - 120	1	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-372490/1**

**Matrix: Water**  
**Analysis Batch: 372490**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			08/16/17 18:25	1

**Lab Sample ID: LCS 480-372490/2**

**Matrix: Water**  
**Analysis Batch: 372490**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	512	533.0		mg/L		104	85 - 115

**Lab Sample ID: 480-122778-1 DU**

**Matrix: Water**  
**Analysis Batch: 372490**

**Client Sample ID: U-4S**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	491		489.0		mg/L		0.4	10

**Lab Sample ID: 480-122778-18 DU**

**Matrix: Water**  
**Analysis Batch: 372490**

**Client Sample ID: D-4D**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	469		467.0		mg/L		0.4	10

**Lab Sample ID: MB 480-372491/1**

**Matrix: Water**  
**Analysis Batch: 372491**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			08/16/17 18:35	1

**Lab Sample ID: LCS 480-372491/2**

**Matrix: Water**  
**Analysis Batch: 372491**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	512	524.0		mg/L		102	85 - 115

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 480-372726/23**  
**Matrix: Water**  
**Analysis Batch: 372726**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: LCS 480-372726/45**  
**Matrix: Water**  
**Analysis Batch: 372726**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

**Lab Sample ID: 480-122778-16 DU**  
**Matrix: Water**  
**Analysis Batch: 372726**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.7	HF	7.6		SU		0.4	5
Temperature	21.0	HF	20.9		Degrees C		0.3	10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Metals

### Prep Batch: 372526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	7470A	
480-122778-2	U-4D	Total/NA	Water	7470A	
480-122778-3	U-5S	Total/NA	Water	7470A	
480-122778-4	DUPLICATE #1	Total/NA	Water	7470A	
480-122778-5	U-5D	Total/NA	Water	7470A	
480-122778-6	FIELD BLANK #1	Total/NA	Water	7470A	
480-122778-7	FIELD BLANK #2	Total/NA	Water	7470A	
480-122778-8	D-5S2	Total/NA	Water	7470A	
480-122778-9	D-5D	Total/NA	Water	7470A	
480-122778-10	D-3S	Total/NA	Water	7470A	
480-122778-11	D-3D	Total/NA	Water	7470A	
480-122778-12	DUPLICATE #2	Total/NA	Water	7470A	
480-122778-13	D-1S	Total/NA	Water	7470A	
480-122778-14	D-1D	Total/NA	Water	7470A	
480-122778-15	D-2S	Total/NA	Water	7470A	
480-122778-16	D-2D	Total/NA	Water	7470A	
480-122778-17	D-4S	Total/NA	Water	7470A	
480-122778-18	D-4D	Total/NA	Water	7470A	
480-122778-19	D-8	Total/NA	Water	7470A	
480-122778-20	D-9	Total/NA	Water	7470A	
MB 480-372526/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-372526/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-122778-2 MS	U-4D	Total/NA	Water	7470A	
480-122778-2 MSD	U-4D	Total/NA	Water	7470A	

### Prep Batch: 372528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	7470A	
MB 480-372528/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-372528/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 372529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	3020A	
480-122778-2	U-4D	Total/NA	Water	3020A	
480-122778-3	U-5S	Total/NA	Water	3020A	
480-122778-4	DUPLICATE #1	Total/NA	Water	3020A	
480-122778-5	U-5D	Total/NA	Water	3020A	
480-122778-6	FIELD BLANK #1	Total/NA	Water	3020A	
480-122778-7	FIELD BLANK #2	Total/NA	Water	3020A	
480-122778-8	D-5S2	Total/NA	Water	3020A	
480-122778-9	D-5D	Total/NA	Water	3020A	
480-122778-10	D-3S	Total/NA	Water	3020A	
480-122778-11	D-3D	Total/NA	Water	3020A	
480-122778-12	DUPLICATE #2	Total/NA	Water	3020A	
480-122778-13	D-1S	Total/NA	Water	3020A	
480-122778-14	D-1D	Total/NA	Water	3020A	
480-122778-15	D-2S	Total/NA	Water	3020A	
480-122778-16	D-2D	Total/NA	Water	3020A	
MB 480-372529/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-372529/2-A	Lab Control Sample	Total/NA	Water	3020A	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Metals (Continued)

### Prep Batch: 372529 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-3 MS	U-5S	Total/NA	Water	3020A	
480-122778-3 MSD	U-5S	Total/NA	Water	3020A	

### Prep Batch: 372532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-17	D-4S	Total/NA	Water	3020A	
480-122778-18	D-4D	Total/NA	Water	3020A	
480-122778-19	D-8	Total/NA	Water	3020A	
480-122778-20	D-9	Total/NA	Water	3020A	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	3020A	
MB 480-372532/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-372532/2-A	Lab Control Sample	Total/NA	Water	3020A	

### Prep Batch: 372653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-18	D-4D	Total/NA	Water	3005A	
480-122778-19	D-8	Total/NA	Water	3005A	
480-122778-20	D-9	Total/NA	Water	3005A	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	3005A	
MB 480-372653/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-372653/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Prep Batch: 372657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	3005A	
480-122778-2	U-4D	Total/NA	Water	3005A	
480-122778-3	U-5S	Total/NA	Water	3005A	
480-122778-4	DUPLICATE #1	Total/NA	Water	3005A	
480-122778-5	U-5D	Total/NA	Water	3005A	
480-122778-6	FIELD BLANK #1	Total/NA	Water	3005A	
480-122778-7	FIELD BLANK #2	Total/NA	Water	3005A	
480-122778-8	D-5S2	Total/NA	Water	3005A	
480-122778-9	D-5D	Total/NA	Water	3005A	
480-122778-10	D-3S	Total/NA	Water	3005A	
480-122778-11	D-3D	Total/NA	Water	3005A	
480-122778-12	DUPLICATE #2	Total/NA	Water	3005A	
480-122778-13	D-1S	Total/NA	Water	3005A	
480-122778-14	D-1D	Total/NA	Water	3005A	
480-122778-15	D-2S	Total/NA	Water	3005A	
480-122778-16	D-2D	Total/NA	Water	3005A	
480-122778-17	D-4S	Total/NA	Water	3005A	
MB 480-372657/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-372657/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-122778-5 MS	U-5D	Total/NA	Water	3005A	
480-122778-5 MSD	U-5D	Total/NA	Water	3005A	

### Analysis Batch: 372678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	7470A	372526
480-122778-2	U-4D	Total/NA	Water	7470A	372526
480-122778-3	U-5S	Total/NA	Water	7470A	372526

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Metals (Continued)

### Analysis Batch: 372678 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-4	DUPLICATE #1	Total/NA	Water	7470A	372526
480-122778-5	U-5D	Total/NA	Water	7470A	372526
480-122778-6	FIELD BLANK #1	Total/NA	Water	7470A	372526
480-122778-7	FIELD BLANK #2	Total/NA	Water	7470A	372526
480-122778-8	D-5S2	Total/NA	Water	7470A	372526
480-122778-9	D-5D	Total/NA	Water	7470A	372526
480-122778-10	D-3S	Total/NA	Water	7470A	372526
480-122778-11	D-3D	Total/NA	Water	7470A	372526
480-122778-12	DUPLICATE #2	Total/NA	Water	7470A	372526
480-122778-13	D-1S	Total/NA	Water	7470A	372526
480-122778-14	D-1D	Total/NA	Water	7470A	372526
480-122778-15	D-2S	Total/NA	Water	7470A	372526
480-122778-16	D-2D	Total/NA	Water	7470A	372526
480-122778-17	D-4S	Total/NA	Water	7470A	372526
480-122778-18	D-4D	Total/NA	Water	7470A	372526
480-122778-19	D-8	Total/NA	Water	7470A	372526
480-122778-20	D-9	Total/NA	Water	7470A	372526
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	7470A	372528
MB 480-372526/1-A	Method Blank	Total/NA	Water	7470A	372526
MB 480-372528/1-A	Method Blank	Total/NA	Water	7470A	372528
LCS 480-372526/2-A	Lab Control Sample	Total/NA	Water	7470A	372526
LCS 480-372528/2-A	Lab Control Sample	Total/NA	Water	7470A	372528
480-122778-2 MS	U-4D	Total/NA	Water	7470A	372526
480-122778-2 MSD	U-4D	Total/NA	Water	7470A	372526

### Analysis Batch: 373056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-18	D-4D	Total/NA	Water	6010C	372653
480-122778-19	D-8	Total/NA	Water	6010C	372653
480-122778-20	D-9	Total/NA	Water	6010C	372653
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	6010C	372653
MB 480-372653/1-A	Method Blank	Total/NA	Water	6010C	372653
LCS 480-372653/2-A	Lab Control Sample	Total/NA	Water	6010C	372653

### Analysis Batch: 373489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	6010C	372657
480-122778-2	U-4D	Total/NA	Water	6010C	372657
480-122778-3	U-5S	Total/NA	Water	6010C	372657
480-122778-4	DUPLICATE #1	Total/NA	Water	6010C	372657
480-122778-5	U-5D	Total/NA	Water	6010C	372657
480-122778-6	FIELD BLANK #1	Total/NA	Water	6010C	372657
480-122778-7	FIELD BLANK #2	Total/NA	Water	6010C	372657
480-122778-8	D-5S2	Total/NA	Water	6010C	372657
480-122778-9	D-5D	Total/NA	Water	6010C	372657
480-122778-10	D-3S	Total/NA	Water	6010C	372657
480-122778-11	D-3D	Total/NA	Water	6010C	372657
480-122778-12	DUPLICATE #2	Total/NA	Water	6010C	372657
480-122778-13	D-1S	Total/NA	Water	6010C	372657
480-122778-14	D-1D	Total/NA	Water	6010C	372657
480-122778-15	D-2S	Total/NA	Water	6010C	372657

TestAmerica Buffalo



# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Metals (Continued)

### Analysis Batch: 373489 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-16	D-2D	Total/NA	Water	6010C	372657
480-122778-17	D-4S	Total/NA	Water	6010C	372657
MB 480-372657/1-A	Method Blank	Total/NA	Water	6010C	372657
LCS 480-372657/2-A	Lab Control Sample	Total/NA	Water	6010C	372657
480-122778-5 MS	U-5D	Total/NA	Water	6010C	372657
480-122778-5 MSD	U-5D	Total/NA	Water	6010C	372657

### Analysis Batch: 373509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	6020A	372529
480-122778-2	U-4D	Total/NA	Water	6020A	372529
480-122778-3	U-5S	Total/NA	Water	6020A	372529
480-122778-4	DUPLICATE #1	Total/NA	Water	6020A	372529
480-122778-5	U-5D	Total/NA	Water	6020A	372529
480-122778-6	FIELD BLANK #1	Total/NA	Water	6020A	372529
480-122778-7	FIELD BLANK #2	Total/NA	Water	6020A	372529
480-122778-8	D-5S2	Total/NA	Water	6020A	372529
480-122778-9	D-5D	Total/NA	Water	6020A	372529
480-122778-10	D-3S	Total/NA	Water	6020A	372529
480-122778-11	D-3D	Total/NA	Water	6020A	372529
480-122778-12	DUPLICATE #2	Total/NA	Water	6020A	372529
480-122778-13	D-1S	Total/NA	Water	6020A	372529
480-122778-14	D-1D	Total/NA	Water	6020A	372529
480-122778-15	D-2S	Total/NA	Water	6020A	372529
480-122778-16	D-2D	Total/NA	Water	6020A	372529
MB 480-372529/1-A	Method Blank	Total/NA	Water	6020A	372529
LCS 480-372529/2-A	Lab Control Sample	Total/NA	Water	6020A	372529
480-122778-3 MS	U-5S	Total/NA	Water	6020A	372529
480-122778-3 MSD	U-5S	Total/NA	Water	6020A	372529

### Analysis Batch: 373696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-17	D-4S	Total/NA	Water	6020A	372532
480-122778-18	D-4D	Total/NA	Water	6020A	372532
480-122778-19	D-8	Total/NA	Water	6020A	372532
480-122778-20	D-9	Total/NA	Water	6020A	372532
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	6020A	372532
MB 480-372532/1-A	Method Blank	Total/NA	Water	6020A	372532
LCS 480-372532/2-A	Lab Control Sample	Total/NA	Water	6020A	372532

### Prep Batch: 374152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-18	D-4D	Total/NA	Water	3005A	
480-122778-19	D-8	Total/NA	Water	3005A	
MB 480-374152/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-374152/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-374152/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	

### Analysis Batch: 374182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-14	D-1D	Total/NA	Water	6010C	372657

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Analysis Batch: 374381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-18	D-4D	Total/NA	Water	6010C	374152
480-122778-19	D-8	Total/NA	Water	6010C	374152
MB 480-374152/1-A	Method Blank	Total/NA	Water	6010C	374152
LCS 480-374152/2-A	Lab Control Sample	Total/NA	Water	6010C	374152
LCSD 480-374152/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	374152

## General Chemistry

### Analysis Batch: 372490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	SM 2540C	
480-122778-2	U-4D	Total/NA	Water	SM 2540C	
480-122778-3	U-5S	Total/NA	Water	SM 2540C	
480-122778-4	DUPLICATE #1	Total/NA	Water	SM 2540C	
480-122778-5	U-5D	Total/NA	Water	SM 2540C	
480-122778-6	FIELD BLANK #1	Total/NA	Water	SM 2540C	
480-122778-7	FIELD BLANK #2	Total/NA	Water	SM 2540C	
480-122778-8	D-5S2	Total/NA	Water	SM 2540C	
480-122778-9	D-5D	Total/NA	Water	SM 2540C	
480-122778-10	D-3S	Total/NA	Water	SM 2540C	
480-122778-11	D-3D	Total/NA	Water	SM 2540C	
480-122778-12	DUPLICATE #2	Total/NA	Water	SM 2540C	
480-122778-13	D-1S	Total/NA	Water	SM 2540C	
480-122778-14	D-1D	Total/NA	Water	SM 2540C	
480-122778-15	D-2S	Total/NA	Water	SM 2540C	
480-122778-16	D-2D	Total/NA	Water	SM 2540C	
480-122778-17	D-4S	Total/NA	Water	SM 2540C	
480-122778-18	D-4D	Total/NA	Water	SM 2540C	
MB 480-372490/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-372490/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-122778-1 DU	U-4S	Total/NA	Water	SM 2540C	
480-122778-18 DU	D-4D	Total/NA	Water	SM 2540C	

### Analysis Batch: 372491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-19	D-8	Total/NA	Water	SM 2540C	
480-122778-20	D-9	Total/NA	Water	SM 2540C	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-372491/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-372491/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 372726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	SM 4500 H+ B	
480-122778-2	U-4D	Total/NA	Water	SM 4500 H+ B	
480-122778-3	U-5S	Total/NA	Water	SM 4500 H+ B	
480-122778-4	DUPLICATE #1	Total/NA	Water	SM 4500 H+ B	
480-122778-5	U-5D	Total/NA	Water	SM 4500 H+ B	
480-122778-6	FIELD BLANK #1	Total/NA	Water	SM 4500 H+ B	
480-122778-7	FIELD BLANK #2	Total/NA	Water	SM 4500 H+ B	
480-122778-8	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-122778-9	D-5D	Total/NA	Water	SM 4500 H+ B	
480-122778-10	D-3S	Total/NA	Water	SM 4500 H+ B	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## General Chemistry (Continued)

### Analysis Batch: 372726 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-11	D-3D	Total/NA	Water	SM 4500 H+ B	
480-122778-12	DUPLICATE #2	Total/NA	Water	SM 4500 H+ B	
480-122778-13	D-1S	Total/NA	Water	SM 4500 H+ B	
480-122778-14	D-1D	Total/NA	Water	SM 4500 H+ B	
480-122778-15	D-2S	Total/NA	Water	SM 4500 H+ B	
480-122778-16	D-2D	Total/NA	Water	SM 4500 H+ B	
480-122778-17	D-4S	Total/NA	Water	SM 4500 H+ B	
480-122778-18	D-4D	Total/NA	Water	SM 4500 H+ B	
480-122778-19	D-8	Total/NA	Water	SM 4500 H+ B	
480-122778-20	D-9	Total/NA	Water	SM 4500 H+ B	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
LCS 480-372726/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-372726/45	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
480-122778-16 DU	D-2D	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 373329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	300.0	
480-122778-2	U-4D	Total/NA	Water	300.0	
480-122778-3	U-5S	Total/NA	Water	300.0	
480-122778-4	DUPLICATE #1	Total/NA	Water	300.0	
480-122778-5	U-5D	Total/NA	Water	300.0	
480-122778-6	FIELD BLANK #1	Total/NA	Water	300.0	
480-122778-7	FIELD BLANK #2	Total/NA	Water	300.0	
480-122778-8	D-5S2	Total/NA	Water	300.0	
480-122778-9	D-5D	Total/NA	Water	300.0	
480-122778-10	D-3S	Total/NA	Water	300.0	
480-122778-11	D-3D	Total/NA	Water	300.0	
480-122778-12	DUPLICATE #2	Total/NA	Water	300.0	
480-122778-13	D-1S	Total/NA	Water	300.0	
480-122778-14	D-1D	Total/NA	Water	300.0	
480-122778-15	D-2S	Total/NA	Water	300.0	
480-122778-16	D-2D	Total/NA	Water	300.0	
480-122778-17	D-4S	Total/NA	Water	300.0	
480-122778-18	D-4D	Total/NA	Water	300.0	
480-122778-19	D-8	Total/NA	Water	300.0	
480-122778-20	D-9	Total/NA	Water	300.0	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	300.0	
MB 480-373329/28	Method Blank	Total/NA	Water	300.0	
MB 480-373329/4	Method Blank	Total/NA	Water	300.0	
LCS 480-373329/27	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-373329/3	Lab Control Sample	Total/NA	Water	300.0	
480-122778-4 MS	DUPLICATE #1	Total/NA	Water	300.0	
480-122778-4 MSD	DUPLICATE #1	Total/NA	Water	300.0	
480-122778-13 MS	D-1S	Total/NA	Water	300.0	
480-122778-19 MS	D-8	Total/NA	Water	300.0	
480-122778-19 MSD	D-8	Total/NA	Water	300.0	

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: U-4S

Date Collected: 08/14/17 10:55

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:02	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 13:36	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:27	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 18:57	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 19:45	ALZ	TAL BUF

## Client Sample ID: U-4D

Date Collected: 08/14/17 11:05

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:06	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 13:42	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:28	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 19:05	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 19:48	ALZ	TAL BUF

## Client Sample ID: U-5S

Date Collected: 08/14/17 11:50

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:20	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 13:47	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:35	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 19:13	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 19:51	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: DUPLICATE #1

Lab Sample ID: 480-122778-4

Date Collected: 08/14/17 00:00

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:24	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 14:39	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:37	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 19:21	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 19:54	ALZ	TAL BUF

## Client Sample ID: U-5D

Lab Sample ID: 480-122778-5

Date Collected: 08/14/17 12:00

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:27	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 14:44	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:38	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 20:02	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 19:57	ALZ	TAL BUF

## Client Sample ID: FIELD BLANK #1

Lab Sample ID: 480-122778-6

Date Collected: 08/14/17 12:40

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:45	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 14:50	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:44	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	373329	08/22/17 20:10	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:03	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: FIELD BLANK #2

Date Collected: 08/14/17 12:45  
Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 04:48	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 14:55	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:46	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	373329	08/22/17 20:18	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:05	ALZ	TAL BUF

## Client Sample ID: D-5S2

Date Collected: 08/14/17 13:20  
Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:03	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:01	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:47	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	373329	08/22/17 20:27	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:08	ALZ	TAL BUF

## Client Sample ID: D-5D

Date Collected: 08/14/17 14:00  
Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:06	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:06	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:49	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 20:35	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:11	ALZ	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-3S

Date Collected: 08/14/17 14:20

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:10	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:12	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:51	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	373329	08/22/17 20:43	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:14	ALZ	TAL BUF

## Client Sample ID: D-3D

Date Collected: 08/14/17 14:40

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:13	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:17	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:53	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 20:51	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:17	ALZ	TAL BUF

## Client Sample ID: DUPLICATE #2

Date Collected: 08/14/17 00:00

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:17	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:23	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:55	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 20:59	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:20	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-1S

Date Collected: 08/15/17 08:45

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:21	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:46	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:57	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	373329	08/22/17 21:07	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:23	ALZ	TAL BUF

## Client Sample ID: D-1D

Date Collected: 08/15/17 09:20

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	374182	08/25/17 14:13	LMH	TAL BUF
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:24	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:52	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 12:59	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 21:56	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:26	ALZ	TAL BUF

## Client Sample ID: D-2S

Date Collected: 08/15/17 09:55

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:28	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 15:57	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:00	MVZ	TAL BUF
Total/NA	Analysis	300.0		5	373329	08/22/17 22:04	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:29	ALZ	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-2D

Lab Sample ID: 480-122778-16

Date Collected: 08/15/17 10:18

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:31	LMH	TAL BUF
Total/NA	Prep	3020A			372529	08/17/17 08:12	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373509	08/22/17 16:03	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:06	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 22:12	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:34	ALZ	TAL BUF

## Client Sample ID: D-4S

Lab Sample ID: 480-122778-17

Date Collected: 08/15/17 10:40

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372657	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373489	08/22/17 05:46	LMH	TAL BUF
Total/NA	Prep	3020A			372532	08/17/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373696	08/23/17 22:04	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:07	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 22:20	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:40	ALZ	TAL BUF

## Client Sample ID: D-4D

Lab Sample ID: 480-122778-18

Date Collected: 08/15/17 11:05

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372653	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373056	08/18/17 16:01	LMH	TAL BUF
Total/NA	Prep	3005A			374152	08/28/17 09:18	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	374381	08/28/17 15:04	JRK	TAL BUF
Total/NA	Prep	3020A			372532	08/17/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373696	08/23/17 22:09	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:10	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 22:29	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372490	08/16/17 18:25	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:42	ALZ	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Client Sample ID: D-8

Date Collected: 08/15/17 11:30

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372653	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373056	08/18/17 16:04	LMH	TAL BUF
Total/NA	Prep	3005A			374152	08/28/17 09:18	MVZ	TAL BUF
Total/NA	Analysis	6010C		1	374381	08/28/17 15:01	JRK	TAL BUF
Total/NA	Prep	3020A			372532	08/17/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373696	08/23/17 22:15	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:12	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 22:37	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372491	08/16/17 18:35	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:45	ALZ	TAL BUF

## Client Sample ID: D-9

Date Collected: 08/15/17 12:10

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372653	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373056	08/18/17 16:08	LMH	TAL BUF
Total/NA	Prep	3020A			372532	08/17/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373696	08/23/17 22:20	JRK	TAL BUF
Total/NA	Prep	7470A			372526	08/17/17 09:30	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:14	MVZ	TAL BUF
Total/NA	Analysis	300.0		2	373329	08/22/17 23:17	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372491	08/16/17 18:35	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:47	ALZ	TAL BUF

## Client Sample ID: EQUIPMENT BLANK

Date Collected: 08/15/17 12:30

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			372653	08/18/17 08:37	EMB	TAL BUF
Total/NA	Analysis	6010C		1	373056	08/18/17 16:11	LMH	TAL BUF
Total/NA	Prep	3020A			372532	08/17/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	373696	08/23/17 22:26	JRK	TAL BUF
Total/NA	Prep	7470A			372528	08/17/17 07:48	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	372678	08/17/17 13:19	MVZ	TAL BUF
Total/NA	Analysis	300.0		1	373329	08/22/17 23:26	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	372491	08/16/17 18:35	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	372726	08/17/17 20:50	ALZ	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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- 2
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# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-122778-1	U-4S	Water	08/14/17 10:55	08/16/17 09:45
480-122778-2	U-4D	Water	08/14/17 11:05	08/16/17 09:45
480-122778-3	U-5S	Water	08/14/17 11:50	08/16/17 09:45
480-122778-4	DUPLICATE #1	Water	08/14/17 00:00	08/16/17 09:45
480-122778-5	U-5D	Water	08/14/17 12:00	08/16/17 09:45
480-122778-6	FIELD BLANK #1	Water	08/14/17 12:40	08/16/17 09:45
480-122778-7	FIELD BLANK #2	Water	08/14/17 12:45	08/16/17 09:45
480-122778-8	D-5S2	Water	08/14/17 13:20	08/16/17 09:45
480-122778-9	D-5D	Water	08/14/17 14:00	08/16/17 09:45
480-122778-10	D-3S	Water	08/14/17 14:20	08/16/17 09:45
480-122778-11	D-3D	Water	08/14/17 14:40	08/16/17 09:45
480-122778-12	DUPLICATE #2	Water	08/14/17 00:00	08/16/17 09:45
480-122778-13	D-1S	Water	08/15/17 08:45	08/16/17 09:45
480-122778-14	D-1D	Water	08/15/17 09:20	08/16/17 09:45
480-122778-15	D-2S	Water	08/15/17 09:55	08/16/17 09:45
480-122778-16	D-2D	Water	08/15/17 10:18	08/16/17 09:45
480-122778-17	D-4S	Water	08/15/17 10:40	08/16/17 09:45
480-122778-18	D-4D	Water	08/15/17 11:05	08/16/17 09:45
480-122778-19	D-8	Water	08/15/17 11:30	08/16/17 09:45
480-122778-20	D-9	Water	08/15/17 12:10	08/16/17 09:45
480-122778-21	EQUIPMENT BLANK	Water	08/15/17 12:30	08/16/17 09:45



Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program: DW NPDES RCRA Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

**Regulatory Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

**Site Contact: Nathaniel Beineman** Date: 8/14/17  
**Lab Contact:** Carrier:

**Project Manager: Ryan Van Dette**  
COC No: 1 of 2 COCs

Sampler:  
For Lab Use Only:  
Wall  
Lab  
Job  
480-122778 COC

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS
U-45	8/14/17	10:35	Grab	Water	7			X	X	X	X	X	X	X
U-40		11:05	Grab	Water	7			X	X	X	X	X	X	X
U-55		11:50	Grab	Water	7			X	X	X	X	X	X	X
Duplicate #1		-	Grab	Water	7			X	X	X	X	X	X	X
U-5D		12:00	Grab	Water	7			X	X	X	X	X	X	X
Field Blank #1		12:40	Grab	Water	7			X	X	X	X	X	X	X
Field Blank #2		12:45	Grab	Water	7			X	X	X	X	X	X	X
D-552		13:20	Grab	Water	7			X	X	X	X	X	X	X
D-5D		14:00	Grab	Water	7			X	X	X	X	X	X	X
D-5		14:20	Grab	Water	7			X	X	X	X	X	X	X
D-D		14:40	Grab	Water	7			X	X	X	X	X	X	X
Duplicate #2		-	Grab	Water	7			X	X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client \_\_\_\_\_ Disposal by Lab \_\_\_\_\_ Archive for \_\_\_\_\_ Months

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Custody Seal No.: \_\_\_\_\_  
Custody Seals Intact: Yes  No

Relinquished by: *[Signature]* Company: *SKB*  
Relinquished by: *[Signature]* Company: *SKB*

Received by: *[Signature]* Company: *SKB*  
Received by: *[Signature]* Company: *SKB*

Date/Time: 8/15/17 15:00  
Date/Time: 8-15 1900

Therm ID No.: \_\_\_\_\_  
Date/Time: 8-15-17 1330  
Date/Time: 8/16/17 0945





Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program:  DW  NPDES  RCRA  Other:

Project Manager: Ryan Van Dette

Site Contact: Nathaniel Beineman

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

**Tel/Fax:**  
Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)							Sample Specific Notes:
						Metals (totals)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	
D-15	8/15/17	8:45	Grab	Water	7	X	X	X	X	X	X	X	
D-20		9:20	Grab	Water	7	X	X	X	X	X	X	X	
D-25		9:55	Grab	Water	7	X	X	X	X	X	X	X	
D-20		10:15	Grab	Water	7	X	X	X	X	X	X	X	
D-45		10:40	Grab	Water	7	X	X	X	X	X	X	X	
D-40		11:05	Grab	Water	7	X	X	X	X	X	X	X	
D-8		11:30	Grab	Water	7	X	X	X	X	X	X	X	
D-4		12:10	Grab	Water	7	X	X	X	X	X	X	X	
Equipment Blank		12:30	Grab	Water	7	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for  Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

**Project Manager:** Ryan Van Dette  
**Site Contact:** Nathaniel Beineman  
**Date:** 8/15/17  
**Carrier:**

**Therm ID No.:**

**Received by:** [Signature] Date/Time: 8/15/17 15:00  
**Company:** TES

**Received by:** [Signature] Date/Time: 8-15-17  
**Company:** TA

**Received in Laboratory by:** [Signature] Date/Time: 8/16/17 0945  
**Company:**

**Cooler Temp. (°C):** Obs'd: \_\_\_\_\_ Corrd: \_\_\_\_\_

**Flammable**  **Skin Irritant**  **Poison B**  **Unknown**





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-122778-1

SDG Number:

**Login Number: 122778**

**List Number: 1**

**Creator: Kolb, Chris M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	Refer to job narrative for details
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-122778-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

9/13/2017 11:50:41 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

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Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Job ID: 480-122778-2**

**Laboratory: TestAmerica Buffalo**

## Narrative

**Job Narrative  
480-122778-2**

## Comments

No additional comments.

## Receipt

The samples were received on 8/16/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 2.5° C, 2.6° C, 2.7° C, 2.9° C, 3.0° C and 3.1° C.

## Receipt Exceptions

Incomplete sample ids were listed on coc, ids listed on sample containers were used for login: D-3S (480-122778-10) and D-3D (480-122778-11).

Sample id listed on coc as "D-2D" collected on 08/15/17 @ 09:20. Listed as "D-1D" collected on 08/15/17 @ 9:20 on sample containers. Info listed on container labels was used for login: D-1D (480-122778-14).

## RAD

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-4S**

**Lab Sample ID: 480-122778-1**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-122778-2**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-122778-3**

No Detections.

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-122778-4**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-122778-5**

No Detections.

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-122778-6**

No Detections.

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-122778-7**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-122778-8**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-122778-9**

No Detections.

**Client Sample ID: D-3S**

**Lab Sample ID: 480-122778-10**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-122778-11**

No Detections.

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-122778-12**

No Detections.

**Client Sample ID: D-1S**

**Lab Sample ID: 480-122778-13**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-122778-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-2S**

**Lab Sample ID: 480-122778-15**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-122778-16**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-122778-17**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-122778-18**

No Detections.

**Client Sample ID: D-8**

**Lab Sample ID: 480-122778-19**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-122778-20**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-122778-21**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-4S**  
**Date Collected: 08/14/17 10:55**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158		0.0813	0.0825	1.00	0.101	pCi/L	08/18/17 10:31	09/12/17 06:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/18/17 10:31	09/12/17 06:26	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.201	U	0.246	0.247	1.00	0.407	pCi/L	08/18/17 11:50	08/28/17 14:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/18/17 11:50	08/28/17 14:15	1
Y Carrier	84.1		40 - 110					08/18/17 11:50	08/28/17 14:15	1





# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-4D**  
**Date Collected: 08/14/17 11:05**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-2**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0887		0.0599	0.0604	1.00	0.0807	pCi/L	08/18/17 09:32	09/12/17 08:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 09:32	09/12/17 08:15	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.662		0.247	0.254	1.00	0.338	pCi/L	08/18/17 10:03	08/29/17 14:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 10:03	08/29/17 14:21	1
Y Carrier	85.2		40 - 110					08/18/17 10:03	08/29/17 14:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-5S**  
**Date Collected: 08/14/17 11:50**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-3**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0940		0.0583	0.0589	1.00	0.0752	pCi/L	08/18/17 09:32	09/12/17 08:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 09:32	09/12/17 08:15	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.215	U	0.200	0.201	1.00	0.323	pCi/L	08/18/17 10:03	08/29/17 14:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 10:03	08/29/17 14:21	1
Y Carrier	87.9		40 - 110					08/18/17 10:03	08/29/17 14:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-122778-4**

Date Collected: 08/14/17 00:00

Matrix: Water

Date Received: 08/16/17 09:45

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.148		0.0660	0.0674	1.00	0.0686	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.426		0.242	0.245	1.00	0.367	pCi/L	08/18/17 10:03	08/29/17 14:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 10:03	08/29/17 14:21	1
Y Carrier	87.5		40 - 110					08/18/17 10:03	08/29/17 14:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-5D**  
**Date Collected: 08/14/17 12:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-5**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0879		0.0560	0.0566	1.00	0.0723	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0944	U	0.229	0.230	1.00	0.393	pCi/L	08/18/17 10:03	08/29/17 14:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					08/18/17 10:03	08/29/17 14:21	1
Y Carrier	83.7		40 - 110					08/18/17 10:03	08/29/17 14:21	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-122778-6**

**Date Collected: 08/14/17 12:40**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0837		0.0520	0.0525	1.00	0.0632	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.243	U	0.218	0.219	1.00	0.350	pCi/L	08/18/17 10:03	08/29/17 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 10:03	08/29/17 14:22	1
Y Carrier	85.6		40 - 110					08/18/17 10:03	08/29/17 14:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-122778-7**

**Date Collected: 08/14/17 12:45**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0440	U	0.0451	0.0452	1.00	0.0706	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.117	U	0.169	0.170	1.00	0.284	pCi/L	08/18/17 10:03	08/29/17 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 10:03	08/29/17 14:22	1
Y Carrier	95.0		40 - 110					08/18/17 10:03	08/29/17 14:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-5S2**  
**Date Collected: 08/14/17 13:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-8**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.138		0.0651	0.0663	1.00	0.0733	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0738	U	0.197	0.197	1.00	0.364	pCi/L	08/18/17 10:03	08/29/17 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 10:03	08/29/17 14:22	1
Y Carrier	84.5		40 - 110					08/18/17 10:03	08/29/17 14:22	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-5D**  
**Date Collected: 08/14/17 14:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-9**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.132		0.0630	0.0641	1.00	0.0682	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.137	U	0.182	0.183	1.00	0.304	pCi/L	08/18/17 10:03	08/29/17 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 10:03	08/29/17 14:22	1
Y Carrier	85.2		40 - 110					08/18/17 10:03	08/29/17 14:22	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-3S**  
**Date Collected: 08/14/17 14:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-10**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.150		0.0665	0.0678	1.00	0.0691	pCi/L	08/18/17 09:32	09/12/17 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 09:32	09/12/17 08:16	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.315	U	0.228	0.229	1.00	0.356	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	82.6		40 - 110					08/18/17 10:03	08/29/17 14:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-3D**  
**Date Collected: 08/14/17 14:40**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-11**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0736		0.0505	0.0510	1.00	0.0657	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.184	U	0.187	0.188	1.00	0.305	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	92.7		40 - 110					08/18/17 10:03	08/29/17 14:23	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-122778-12**

**Date Collected: 08/14/17 00:00**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0994		0.0568	0.0575	1.00	0.0678	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.143	U	0.174	0.175	1.00	0.288	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	87.1		40 - 110					08/18/17 10:03	08/29/17 14:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-1S**  
**Date Collected: 08/15/17 08:45**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-13**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.125		0.0573	0.0584	1.00	0.0511	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.208	U	0.188	0.189	1.00	0.301	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	88.6		40 - 110					08/18/17 10:03	08/29/17 14:23	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-1D**  
**Date Collected: 08/15/17 09:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-14**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.198		0.0719	0.0741	1.00	0.0586	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.121	U	0.199	0.200	1.00	0.337	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	87.9		40 - 110					08/18/17 10:03	08/29/17 14:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-2S**

**Date Collected: 08/15/17 09:55**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-15**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.122		0.0593	0.0603	1.00	0.0609	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0264	U	0.185	0.185	1.00	0.331	pCi/L	08/18/17 10:03	08/29/17 14:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 10:03	08/29/17 14:23	1
Y Carrier	83.4		40 - 110					08/18/17 10:03	08/29/17 14:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-2D**  
**Date Collected: 08/15/17 10:18**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-16**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0726		0.0484	0.0488	1.00	0.0607	pCi/L	08/18/17 09:32	09/12/17 08:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 09:32	09/12/17 08:19	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.134	U	0.194	0.194	1.00	0.325	pCi/L	08/18/17 10:03	08/29/17 14:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 10:03	08/29/17 14:24	1
Y Carrier	84.5		40 - 110					08/18/17 10:03	08/29/17 14:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-4S**  
**Date Collected: 08/15/17 10:40**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-17**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0790		0.0505	0.0510	1.00	0.0544	pCi/L	08/18/17 09:32	09/12/17 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 09:32	09/12/17 08:20	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.356		0.225	0.227	1.00	0.347	pCi/L	08/18/17 10:03	08/29/17 14:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					08/18/17 10:03	08/29/17 14:24	1
Y Carrier	89.3		40 - 110					08/18/17 10:03	08/29/17 14:24	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-4D**  
**Date Collected: 08/15/17 11:05**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-18**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0999		0.0679	0.0685	1.00	0.0943	pCi/L	08/18/17 09:32	09/12/17 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					08/18/17 09:32	09/12/17 08:20	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0899	U	0.217	0.217	1.00	0.371	pCi/L	08/18/17 10:03	08/29/17 14:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					08/18/17 10:03	08/29/17 14:24	1
Y Carrier	88.6		40 - 110					08/18/17 10:03	08/29/17 14:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-8**

**Date Collected: 08/15/17 11:30**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-19**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.130		0.0644	0.0654	1.00	0.0650	pCi/L	08/18/17 09:32	09/12/17 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 09:32	09/12/17 08:20	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.186	U	0.192	0.192	1.00	0.312	pCi/L	08/18/17 10:03	08/29/17 14:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					08/18/17 10:03	08/29/17 14:24	1
Y Carrier	83.7		40 - 110					08/18/17 10:03	08/29/17 14:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: D-9**

**Date Collected: 08/15/17 12:10**

**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-20**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.161		0.0739	0.0753	1.00	0.0788	pCi/L	08/18/17 09:32	09/12/17 08:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 09:32	09/12/17 08:24	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.144	U	0.220	0.220	1.00	0.370	pCi/L	08/18/17 10:03	08/29/17 14:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					08/18/17 10:03	08/29/17 14:24	1
Y Carrier	83.7		40 - 110					08/18/17 10:03	08/29/17 14:24	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-122778-21**

**Date Collected: 08/15/17 12:30**

**Matrix: Water**

**Date Received: 08/16/17 09:45**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.146		0.0744	0.0755	1.00	0.0853	pCi/L	08/18/17 09:32	09/12/17 08:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 09:32	09/12/17 08:24	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0369	U	0.200	0.200	1.00	0.352	pCi/L	08/18/17 10:03	08/29/17 14:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					08/18/17 10:03	08/29/17 14:25	1
Y Carrier	84.5		40 - 110					08/18/17 10:03	08/29/17 14:25	1

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	
480-122778-1	U-4S	99.4	
480-122778-1 DU	U-4S	105	
480-122778-2	U-4D	105	
480-122778-2 DU	U-4D	99.1	
480-122778-3	U-5S	107	
480-122778-4	DUPLICATE #1	105	
480-122778-5	U-5D	106	
480-122778-6	FIELD BLANK #1	108	
480-122778-7	FIELD BLANK #2	110	
480-122778-8	D-5S2	109	
480-122778-9	D-5D	110	
480-122778-10	D-3S	108	
480-122778-11	D-3D	110	
480-122778-12	DUPLICATE #2	107	
480-122778-13	D-1S	109	
480-122778-14	D-1D	107	
480-122778-15	D-2S	109	
480-122778-16	D-2D	109	
480-122778-17	D-4S	110	
480-122778-18	D-4D	104	
480-122778-19	D-8	109	
480-122778-20	D-9	105	
480-122778-21	EQUIPMENT BLANK	108	
LCS 160-322972/2-A	Lab Control Sample	105	
LCS 160-322988/2-A	Lab Control Sample	102	
MB 160-322972/1-A	Method Blank	99.7	
MB 160-322988/1-A	Method Blank	103	

**Tracer/Carrier Legend**  
 Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
480-122778-1	U-4S	99.4	84.1
480-122778-1 DU	U-4S	105	87.9
480-122778-2	U-4D	105	85.2
480-122778-2 DU	U-4D	99.1	86.4
480-122778-3	U-5S	107	87.9
480-122778-4	DUPLICATE #1	105	87.5
480-122778-5	U-5D	106	83.7
480-122778-6	FIELD BLANK #1	108	85.6
480-122778-7	FIELD BLANK #2	110	95.0
480-122778-8	D-5S2	109	84.5
480-122778-9	D-5D	110	85.2
480-122778-10	D-3S	108	82.6

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-122778-11	D-3D	110	92.7
480-122778-12	DUPLICATE #2	107	87.1
480-122778-13	D-1S	109	88.6
480-122778-14	D-1D	107	87.9
480-122778-15	D-2S	109	83.4
480-122778-16	D-2D	109	84.5
480-122778-17	D-4S	110	89.3
480-122778-18	D-4D	104	88.6
480-122778-19	D-8	109	83.7
480-122778-20	D-9	105	83.7
480-122778-21	EQUIPMENT BLANK	108	84.5
LCS 160-322982/2-A	Lab Control Sample	105	83.4
LCS 160-322995/2-A	Lab Control Sample	102	82.2
MB 160-322982/1-A	Method Blank	99.7	82.2
MB 160-322995/1-A	Method Blank	103	84.5

#### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-322972/1-A**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 322972**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.09225		0.0588	0.0594	1.00	0.0758	pCi/L	08/18/17 09:32	09/12/17 08:15	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					08/18/17 09:32	09/12/17 08:15	1

**Lab Sample ID: LCS 160-322972/2-A**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322972**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	9.60	9.104		0.943	1.00	0.0767	pCi/L	95	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						

**Lab Sample ID: 480-122778-2 DU**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 322972**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.0887		0.09180		0.0608	1.00	0.0799	pCi/L	0.03	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	99.1		40 - 110							

**Lab Sample ID: MB 160-322988/1-A**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 322988**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06183	U	0.0504	0.0507	1.00	0.0733	pCi/L	08/18/17 10:31	09/12/17 06:11	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/18/17 10:31	09/12/17 06:11	1

**Lab Sample ID: LCS 160-322988/2-A**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322988**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	9.60	9.306		0.957	1.00	0.0763	pCi/L	97	68 - 137

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Method: 903.0 - Radium-226 (GFPC) (Continued)

**Lab Sample ID: LCS 160-322988/2-A**  
**Matrix: Water**  
**Analysis Batch: 326689**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322988**

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	102		40 - 110

**Lab Sample ID: 480-122778-1 DU**  
**Matrix: Water**  
**Analysis Batch: 326911**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 322988**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.158		0.3348		0.110	1.00	0.0991	pCi/L	0.92	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	105		40 - 110

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-322982/1-A**  
**Matrix: Water**  
**Analysis Batch: 324929**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 322982**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1714	U	0.206	0.206	1.00	0.398	pCi/L	08/18/17 10:03	08/29/17 14:17	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110	08/18/17 10:03	08/29/17 14:17	1
Y Carrier	82.2		40 - 110	08/18/17 10:03	08/29/17 14:17	1

**Lab Sample ID: LCS 160-322982/2-A**  
**Matrix: Water**  
**Analysis Batch: 324784**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322982**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	13.0	15.47		1.64	1.00	0.365	pCi/L	119	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	83.4		40 - 110

**Lab Sample ID: 480-122778-2 DU**  
**Matrix: Water**  
**Analysis Batch: 324784**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 322982**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.662		0.1766	U	0.229	1.00	0.380	pCi/L	1.00	1

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: 480-122778-2 DU**  
**Matrix: Water**  
**Analysis Batch: 324784**

**Client Sample ID: U-4D**  
**Prep Type: Total/NA**  
**Prep Batch: 322982**

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	86.4		40 - 110

**Lab Sample ID: MB 160-322995/1-A**  
**Matrix: Water**  
**Analysis Batch: 324696**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 322995**

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	-0.1084	U	0.184	0.184	1.00	0.351	pCi/L	08/18/17 11:50	08/28/17 14:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					08/18/17 11:50	08/28/17 14:18	1
Y Carrier	84.5		40 - 110					08/18/17 11:50	08/28/17 14:18	1

**Lab Sample ID: LCS 160-322995/2-A**  
**Matrix: Water**  
**Analysis Batch: 324696**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322995**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	13.0	12.59		1.38	1.00	0.368	pCi/L	97	56 - 140	
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	102		40 - 110							
Y Carrier	82.2		40 - 110							

**Lab Sample ID: 480-122778-1 DU**  
**Matrix: Water**  
**Analysis Batch: 324697**

**Client Sample ID: U-4S**  
**Prep Type: Total/NA**  
**Prep Batch: 322995**

Analyte	Sample Sample		DU DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Radium-228	0.201	U	0.2954	U	0.201	1.00	0.305	pCi/L	0.21	1
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	105		40 - 110							
Y Carrier	87.9		40 - 110							

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Rad

### Prep Batch: 322972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-2	U-4D	Total/NA	Water	PrecSep-21	
480-122778-3	U-5S	Total/NA	Water	PrecSep-21	
480-122778-4	DUPLICATE #1	Total/NA	Water	PrecSep-21	
480-122778-5	U-5D	Total/NA	Water	PrecSep-21	
480-122778-6	FIELD BLANK #1	Total/NA	Water	PrecSep-21	
480-122778-7	FIELD BLANK #2	Total/NA	Water	PrecSep-21	
480-122778-8	D-5S2	Total/NA	Water	PrecSep-21	
480-122778-9	D-5D	Total/NA	Water	PrecSep-21	
480-122778-10	D-3S	Total/NA	Water	PrecSep-21	
480-122778-11	D-3D	Total/NA	Water	PrecSep-21	
480-122778-12	DUPLICATE #2	Total/NA	Water	PrecSep-21	
480-122778-13	D-1S	Total/NA	Water	PrecSep-21	
480-122778-14	D-1D	Total/NA	Water	PrecSep-21	
480-122778-15	D-2S	Total/NA	Water	PrecSep-21	
480-122778-16	D-2D	Total/NA	Water	PrecSep-21	
480-122778-17	D-4S	Total/NA	Water	PrecSep-21	
480-122778-18	D-4D	Total/NA	Water	PrecSep-21	
480-122778-19	D-8	Total/NA	Water	PrecSep-21	
480-122778-20	D-9	Total/NA	Water	PrecSep-21	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	PrecSep-21	
MB 160-322972/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-322972/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-122778-2 DU	U-4D	Total/NA	Water	PrecSep-21	

### Prep Batch: 322982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-2	U-4D	Total/NA	Water	PrecSep_0	
480-122778-3	U-5S	Total/NA	Water	PrecSep_0	
480-122778-4	DUPLICATE #1	Total/NA	Water	PrecSep_0	
480-122778-5	U-5D	Total/NA	Water	PrecSep_0	
480-122778-6	FIELD BLANK #1	Total/NA	Water	PrecSep_0	
480-122778-7	FIELD BLANK #2	Total/NA	Water	PrecSep_0	
480-122778-8	D-5S2	Total/NA	Water	PrecSep_0	
480-122778-9	D-5D	Total/NA	Water	PrecSep_0	
480-122778-10	D-3S	Total/NA	Water	PrecSep_0	
480-122778-11	D-3D	Total/NA	Water	PrecSep_0	
480-122778-12	DUPLICATE #2	Total/NA	Water	PrecSep_0	
480-122778-13	D-1S	Total/NA	Water	PrecSep_0	
480-122778-14	D-1D	Total/NA	Water	PrecSep_0	
480-122778-15	D-2S	Total/NA	Water	PrecSep_0	
480-122778-16	D-2D	Total/NA	Water	PrecSep_0	
480-122778-17	D-4S	Total/NA	Water	PrecSep_0	
480-122778-18	D-4D	Total/NA	Water	PrecSep_0	
480-122778-19	D-8	Total/NA	Water	PrecSep_0	
480-122778-20	D-9	Total/NA	Water	PrecSep_0	
480-122778-21	EQUIPMENT BLANK	Total/NA	Water	PrecSep_0	
MB 160-322982/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-322982/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-122778-2 DU	U-4D	Total/NA	Water	PrecSep_0	

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Rad (Continued)

### Prep Batch: 322988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	PrecSep-21	
MB 160-322988/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-322988/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
480-122778-1 DU	U-4S	Total/NA	Water	PrecSep-21	

### Prep Batch: 322995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-122778-1	U-4S	Total/NA	Water	PrecSep_0	
MB 160-322995/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-322995/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
480-122778-1 DU	U-4S	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Client Sample ID: U-4S

Date Collected: 08/14/17 10:55

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322988	08/18/17 10:31	LDE	TAL SL
Total/NA	Analysis	903.0		1	326911	09/12/17 06:26	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322995	08/18/17 11:50	LDE	TAL SL
Total/NA	Analysis	904.0		1	324697	08/28/17 14:15	RTM	TAL SL

## Client Sample ID: U-4D

Date Collected: 08/14/17 11:05

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:15	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:21	RTM	TAL SL

## Client Sample ID: U-5S

Date Collected: 08/14/17 11:50

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:15	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:21	RTM	TAL SL

## Client Sample ID: DUPLICATE #1

Date Collected: 08/14/17 00:00

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:21	RTM	TAL SL

## Client Sample ID: U-5D

Date Collected: 08/14/17 12:00

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

**Client Sample ID: U-5D**  
**Date Collected: 08/14/17 12:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	324784	08/29/17 14:21	RTM	TAL SL

**Client Sample ID: FIELD BLANK #1**  
**Date Collected: 08/14/17 12:40**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:22	RTM	TAL SL

**Client Sample ID: FIELD BLANK #2**  
**Date Collected: 08/14/17 12:45**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:22	RTM	TAL SL

**Client Sample ID: D-5S2**  
**Date Collected: 08/14/17 13:20**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-8**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:22	RTM	TAL SL

**Client Sample ID: D-5D**  
**Date Collected: 08/14/17 14:00**  
**Date Received: 08/16/17 09:45**

**Lab Sample ID: 480-122778-9**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:22	RTM	TAL SL

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Client Sample ID: D-3S

Lab Sample ID: 480-122778-10

Date Collected: 08/14/17 14:20

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326689	09/12/17 08:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: D-3D

Lab Sample ID: 480-122778-11

Date Collected: 08/14/17 14:40

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: DUPLICATE #2

Lab Sample ID: 480-122778-12

Date Collected: 08/14/17 00:00

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: D-1S

Lab Sample ID: 480-122778-13

Date Collected: 08/15/17 08:45

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: D-1D

Lab Sample ID: 480-122778-14

Date Collected: 08/15/17 09:20

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Client Sample ID: D-1D

Date Collected: 08/15/17 09:20

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: D-2S

Date Collected: 08/15/17 09:55

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:23	RTM	TAL SL

## Client Sample ID: D-2D

Date Collected: 08/15/17 10:18

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:19	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:24	RTM	TAL SL

## Client Sample ID: D-4S

Date Collected: 08/15/17 10:40

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:24	RTM	TAL SL

## Client Sample ID: D-4D

Date Collected: 08/15/17 11:05

Date Received: 08/16/17 09:45

## Lab Sample ID: 480-122778-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:24	RTM	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Client Sample ID: D-8

Lab Sample ID: 480-122778-19

Date Collected: 08/15/17 11:30

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326913	09/12/17 08:20	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:24	RTM	TAL SL

## Client Sample ID: D-9

Lab Sample ID: 480-122778-20

Date Collected: 08/15/17 12:10

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326911	09/12/17 08:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324784	08/29/17 14:24	RTM	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 480-122778-21

Date Collected: 08/15/17 12:30

Matrix: Water

Date Received: 08/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322972	08/18/17 09:32	LDE	TAL SL
Total/NA	Analysis	903.0		1	326911	09/12/17 08:24	RTM	TAL SL
Total/NA	Prep	PrecSep_0			322982	08/18/17 10:03	LDE	TAL SL
Total/NA	Analysis	904.0		1	324783	08/29/17 14:25	RTM	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

## Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

## Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17 *
West Virginia DEP	State Program	3	381	08-31-18

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-122778-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-122778-1	U-4S	Water	08/14/17 10:55	08/16/17 09:45
480-122778-2	U-4D	Water	08/14/17 11:05	08/16/17 09:45
480-122778-3	U-5S	Water	08/14/17 11:50	08/16/17 09:45
480-122778-4	DUPLICATE #1	Water	08/14/17 00:00	08/16/17 09:45
480-122778-5	U-5D	Water	08/14/17 12:00	08/16/17 09:45
480-122778-6	FIELD BLANK #1	Water	08/14/17 12:40	08/16/17 09:45
480-122778-7	FIELD BLANK #2	Water	08/14/17 12:45	08/16/17 09:45
480-122778-8	D-5S2	Water	08/14/17 13:20	08/16/17 09:45
480-122778-9	D-5D	Water	08/14/17 14:00	08/16/17 09:45
480-122778-10	D-3S	Water	08/14/17 14:20	08/16/17 09:45
480-122778-11	D-3D	Water	08/14/17 14:40	08/16/17 09:45
480-122778-12	DUPLICATE #2	Water	08/14/17 00:00	08/16/17 09:45
480-122778-13	D-1S	Water	08/15/17 08:45	08/16/17 09:45
480-122778-14	D-1D	Water	08/15/17 09:20	08/16/17 09:45
480-122778-15	D-2S	Water	08/15/17 09:55	08/16/17 09:45
480-122778-16	D-2D	Water	08/15/17 10:18	08/16/17 09:45
480-122778-17	D-4S	Water	08/15/17 10:40	08/16/17 09:45
480-122778-18	D-4D	Water	08/15/17 11:05	08/16/17 09:45
480-122778-19	D-8	Water	08/15/17 11:30	08/16/17 09:45
480-122778-20	D-9	Water	08/15/17 12:10	08/16/17 09:45
480-122778-21	EQUIPMENT BLANK	Water	08/15/17 12:30	08/16/17 09:45

Regulatory Program: DW NPDES RCRA Other:

Client Contact: SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

Project Manager: Ryan Van Dette  
Tel/Fax:  
Site Contact: Nathaniel Beineman  
Date: 8/14/17  
Carrier:

Analysis Turnaround Time  
CALENDAR DAYS WORKING DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
U-45	8/14/17	10:35	Grab	Water	7			X	X	X	X	X	X	X	
U-40		11:05	Grab	Water	7			X	X	X	X	X	X	X	
U-55		11:50	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #1		-	Grab	Water	7			X	X	X	X	X	X	X	
U-5D		12:00	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank #1		12:40	Grab	Water	7			X	X	X	X	X	X	X	
Field Blank #2		12:45	Grab	Water	7			X	X	X	X	X	X	X	
D-552		13:20	Grab	Water	7			X	X	X	X	X	X	X	
D-5D		14:00	Grab	Water	7			X	X	X	X	X	X	X	
D-5		14:20	Grab	Water	7			X	X	X	X	X	X	X	
D-D		14:40	Grab	Water	7			X	X	X	X	X	X	X	
Duplicate #2		-	Grab	Water	7			X	X	X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous:  Flammable:  Skin Irritant:  Poison B:  Unknown:

\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium

Return to Client:  Disposal by Lab:  Archive for \_\_\_\_\_ Months

Custody Seal No.: \_\_\_\_\_  
Relinquished by: *[Signature]* Company: *SKB*  
Relinquished by: *[Signature]* Company: *FA*  
Received by: *[Signature]* Company: *FA*  
Received by: *[Signature]* Company: *FA*  
Date/Time: 8-15-17 15:00  
Date/Time: 8-15-17 15:00  
Date/Time: 8-15-17 0945  
Date/Time: 8-15-17 1330

Therm ID No.: \_\_\_\_\_  
Cooler Temp. (°C): \_\_\_\_\_ Obs'd: \_\_\_\_\_  
Corr'd: \_\_\_\_\_





Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

Regulatory Program: DW NPDES RCRA Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 7  
Site:  
P O # 3063-17-01056

**Project Manager:** Ryan Van Dette  
**Tel/Fax:**

**Site Contact:** Nathaniel Beineman  
**Date:** 8/15/17  
**Carrier:**

**COC No.:** 2 of 2 COCs

**Sampler:**  
**For Lab Use Only:**  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

**Analysis Turnaround Time**  
WORKING DAYS  
CALENDAR DAYS  
TAT if different from Below  
2 weeks  
1 week  
2 days  
1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)							Sample Specific Notes:
						Metals (totals)*+ Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS	
D-15	8/15/17	8:45	Grab	Water	7	X	X	X	X	X	X	X	
D-20		9:20	Grab	Water	7	X	X	X	X	X	X	X	
D-25		9:55	Grab	Water	7	X	X	X	X	X	X	X	
D-20		10:15	Grab	Water	7	X	X	X	X	X	X	X	
D-45		10:40	Grab	Water	7	X	X	X	X	X	X	X	
D-40		11:05	Grab	Water	7	X	X	X	X	X	X	X	
D-8		11:30	Grab	Water	7	X	X	X	X	X	X	X	
D-4		12:10	Grab	Water	7	X	X	X	X	X	X	X	
Equipment Blank		12:30	Grab	Water	7	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for  Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**

**Custody Seal No.:** Yes  No

Relinquished by: *[Signature]* Company: *SKB* Date/Time: 8/15/17 15:00

Relinquished by: *[Signature]* Company: *TA* Date/Time: 8-15-17

Relinquished by: *[Signature]* Company: *[Blank]* Date/Time: *[Blank]*

Received by: *[Signature]* Company: *TA* Date/Time: 8-15 1330

Received by: *[Signature]* Company: *[Blank]* Date/Time: 8/16/17 0945

Received in Laboratory by: *[Signature]* Company: *[Blank]* Date/Time: *[Blank]*

Therm ID No.: *[Blank]*





# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T	Carrier Tracking No(s): 480-36654-1
Client Contact: Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota	Job #: 480-122778-1
Address: 13715 Rider Trail North, City: Earth City State, Zip: MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email:		Due Date Requested: 8/28/2017	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify) Other:
Project Name: SKB Rosemount Site: Rosemount		TAT Requested (days):	Analysis Requested
Sample Identification - Client ID (Lab ID)		Field Filtered Sample (Yes or No)	Total Number of Containers
U-4S (480-122778-1)	8/14/17	10:55 Central	Water
U-4D (480-122778-2)	8/14/17	11:05 Central	Water
U-5S (480-122778-3)	8/14/17	11:50 Central	Water
DUPLICATE #1 (480-122778-4)	8/14/17	Central	Water
U-5D (480-122778-5)	8/14/17	12:00 Central	Water
FIELD BLANK #1 (480-122778-6)	8/14/17	12:40 Central	Water
FIELD BLANK #2 (480-122778-7)	8/14/17	12:45 Central	Water
D-5S2 (480-122778-8)	8/14/17	13:20 Central	Water
D-5D (480-122778-9)	8/14/17	14:00 Central	Water
Special Instructions/Note:		Perform MS/MSD (Yes or No)	903.0/PreSep_21 Standard Target List
Special Instructions/Note:		904.0/PreSep_0 Standard Target List	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)  
 Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by:  
 Relinquished by: *[Signature]*  
 Date/Time: 8/16/17 1600  
 Relinquished by:  
 Date/Time:  
 Relinquished by:  
 Date/Time:

Time:  
 Date:  
 Method of Shipment:  
 Resealed by: *[Signature]*  
 Date/Time: 8/17/17 0510  
 Company: TASTA  
 Received by: *[Signature]*  
 Date/Time:  
 Company:  
 Received by:  
 Date/Time:  
 Company:





<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T.	Carrier Tracking No(s):	COC No: 480-36654.2
Client Contact: Shipping/Receiving		E-Mail: ryan.vandette@testamericainc.com	State of Origin: Minnesota	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Minnesota	Job #: 480-122778-1	Job #: 480-122778-1
Address: 13715 Rider Trail North, Earth City, MO, 63045		Due Date Requested: 8/28/2017	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		TAT Requested (days):	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Email:		PO #:	Total Number of Containers	
WO #:		Project #:	Special Instructions/Note:	
Site: Rosemount		SSOW#:		
<b>Sample Identification - Client ID (Lab ID)</b>		Field Filtered Sample (Yes or No)	903.0/PreSep_21 Standard Target List	904.0/PreSep_0 Standard Target List
Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)
D-3S (480-122778-10)	8/14/17	14:20 Central		Water
D-3D (480-122778-11)	8/14/17	14:40 Central	X	Water
DUPLICATE #2 (480-122778-12)	8/14/17	Central	X	Water
D-1S (480-122778-13)	8/15/17	08:45 Central	X	Water
D-1D (480-122778-14)	8/15/17	09:20 Central	X	Water
D-2S (480-122778-15)	8/15/17	09:55 Central	X	Water
D-2D (480-122778-16)	8/15/17	10:18 Central	X	Water
D-4S (480-122778-17)	8/15/17	10:40 Central	X	Water
D-4D (480-122778-18)	8/15/17	11:05 Central	X	Water

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. |

<b>Possible Hazard Identification</b>		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month )	
Unconfirmed	Deliverable Requested: I, II, III, IV, Other (specify)	Return To Client	Disposal By Lab
Primary Deliverable Rank: 2		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	8/16/17	1600	Company: <i>[Signature]</i>
Relinquished by:	Date/Time:	8/17/17	0910
Relinquished by:	Date/Time:		Company: ASIT
Relinquished by:	Date/Time:		Company:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	





<b>Client Information (Sub Contract Lab)</b>		Lab PM: VanDette, Ryan T	Lab Tracking No(s):	COC No: 480-36654-3
Client Contact:		E-Mail: ryan.vandette@testamericainc.com	State of Origin: Minnesota	Page: 3 of 3
Shipping/Receiving		Accreditations Required (See note): NELAP - Minnesota		
Company: TestAmerica Laboratories, Inc.		Job #: 480-122778-1		
Address: 13715 Rider Trail North,		Preservation Codes:		
City: Earth City	Due Date Requested: 8/28/2017	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
State, Zip: MO, 63045	TAT Requested (days):	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:	Total Number of Containers		
Email:	WO #:	Analysis Requested		
Project Name: SKB Rosemount	Project #: 48013709	903.0/PrecSep_21 Standard Target List		
Site: Rosemount	SSOW#:	904.0/PrecSep_0 Standard Target List		
Sample Identification - Client ID (Lab ID)		Perform MS/MSD (Yes or No)		
Sample Date		Field Filtered Sample (Yes or No)		
Sample Time		909.0/PrecSep_21 Standard Target List		
Sample Type (C=Comp, G=grab)		910.0/PrecSep_0 Standard Target List		
Matrix (W=water, S=solid, O=soil, A=air, BT=tissue, A=alt)		Total Number of Containers		
Preservation Code		Special Instructions/Note:		
D-8 (480-122778-19)	8/15/17 11:30 Central	Water	X	3
D-9 (480-122778-20)	8/15/17 12:10 Central	Water	X	3
EQUIPMENT BLANK (480-122778-21)	8/15/17 12:30 Central	Water	X	3
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.				
<b>Possible Hazard Identification</b>				
Unconfirmed				
Deliverable Requested: I, II, III, IV, Other (specify)				
Primary Deliverable Rank: 2				
Empty Kit Relinquished by:				
Date: 8/16/17 16:00				
Relinquished by: [Signature]				
Date/Time: 8/16/17 0910				
Relinquished by: [Signature]				
Date/Time:				
Relinquished by:				
Date/Time:				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				
Custody Seal No.:				
Cooler Temperature(s) °C and Other Remarks:				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:				
Method of Shipment:				
Received by: [Signature]				
Date/Time: 8/16/17 0910				
Company: [Signature]				
Received by:				
Date/Time:				
Received by:				
Date/Time:				





## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-122778-2

SDG Number:

**Login Number: 122778**

**List Number: 1**

**Creator: Kolb, Chris M**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	Refer to job narrative for details
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-122778-2

SDG Number:

**Login Number: 122778**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 08/17/17 02:03 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0,18.0,18.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-123762-1

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

9/20/2017 11:06:42 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

Review your project  
results through

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Job ID: 480-123762-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-123762-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/7/2017 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 3.4° C, 4.0° C, 4.1° C and 4.4° C.

#### HPLC/IC

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: D-1S (480-123762-1), D-1D (480-123762-2), D-2S (480-123762-3), D-2D (480-123762-4), D-4S (480-123762-5) and D-4D (480-123762-6). The sample was analyzed at a dilution based on screening results.

Method(s) 300.0: The following samples was reported with elevated reporting limits for all analytes: D-8 (480-123762-7), D-9 (480-123762-8), U-4S (480-123762-9), U-4D (480-123762-10), U-5S (480-123762-11), U-5D (480-123762-12), D-5S2 (480-123762-13), D-5D (480-123762-14), D-3S (480-123762-15), D-3D (480-123762-16), DUPLICATE #1 (480-123762-18) and DUPLICATE #2 (480-123762-20). The sample was analyzed at a dilution based on screening results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6020A: The continuing calibration verification (CCV 480-376328/48) associated with batch recovered above the upper control limit for total Cobalt and Molybdenum and The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: FIELD BLANK #1 (480-123762-19) and DUPLICATE #2 (480-123762-20).

Method(s) 6020A: The continuing calibration verification (CCV 480-376328/10) associated with batch 376328 recovered above the upper control limit for total Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: D-1S (480-123762-1), D-1D (480-123762-2) and (MB 480-376038/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: D-1S (480-123762-1), D-1D (480-123762-2), D-2S (480-123762-3), D-2D (480-123762-4), D-4S (480-123762-5), D-4D (480-123762-6), D-8 (480-123762-7), D-9 (480-123762-8), U-4S (480-123762-9), U-4D (480-123762-10), U-5S (480-123762-11), U-5D (480-123762-12), D-5S2 (480-123762-13), D-5D (480-123762-14), D-3S (480-123762-15), D-3D (480-123762-16), EQUIPMENT BLANK (480-123762-17), DUPLICATE #1 (480-123762-18), FIELD BLANK #1 (480-123762-19), DUPLICATE #2 (480-123762-20) and FIELD BLANK #2 (480-123762-21).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: D-1S

## Lab Sample ID: 480-123762-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.049		0.020		mg/L	1		6010C	Total/NA
Calcium	102		0.50		mg/L	1		6010C	Total/NA
Chloride	34.9		1.0		mg/L	2		300.0	Total/NA
Sulfate	26.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	473		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.5	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-1D

## Lab Sample ID: 480-123762-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	88.7		0.50		mg/L	1		6010C	Total/NA
Chloride	39.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.9		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	437		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.9	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2S

## Lab Sample ID: 480-123762-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.048		0.0020		mg/L	1		6010C	Total/NA
Boron	0.027		0.020		mg/L	1		6010C	Total/NA
Calcium	98.3		0.50		mg/L	1		6010C	Total/NA
Chloride	46.2		1.0		mg/L	2		300.0	Total/NA
Sulfate	27.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	460		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-2D

## Lab Sample ID: 480-123762-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.048		0.0020		mg/L	1		6010C	Total/NA
Calcium	84.0		0.50		mg/L	1		6010C	Total/NA
Chloride	31.9		1.0		mg/L	2		300.0	Total/NA
Sulfate	23.5		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	429		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4S

## Lab Sample ID: 480-123762-5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: D-4S (Continued)

## Lab Sample ID: 480-123762-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.067		0.0020		mg/L	1		6010C	Total/NA
Calcium	95.1		0.50		mg/L	1		6010C	Total/NA
Chloride	45.5		1.0		mg/L	2		300.0	Total/NA
Sulfate	26.7		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	424		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.0	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-4D

## Lab Sample ID: 480-123762-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.056		0.0020		mg/L	1		6010C	Total/NA
Calcium	85.6		0.50		mg/L	1		6010C	Total/NA
Chloride	43.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	25.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	418		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-8

## Lab Sample ID: 480-123762-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Calcium	65.1		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0046		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.58		0.30		ug/L	1		6020A	Total/NA
Chloride	16.1		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.11		0.10		mg/L	2		300.0	Total/NA
Sulfate	33.0		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	311		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	8.1	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.7	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-9

## Lab Sample ID: 480-123762-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.058		0.0020		mg/L	1		6010C	Total/NA
Boron	0.021		0.020		mg/L	1		6010C	Total/NA
Calcium	83.5		0.50		mg/L	1		6010C	Total/NA
Chromium	0.0068		0.0040		mg/L	1		6010C	Total/NA
Cobalt	0.88		0.30		ug/L	1		6020A	Total/NA
Chloride	39.9		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.11		0.10		mg/L	2		300.0	Total/NA
Sulfate	23.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	450		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: D-9 (Continued)

## Lab Sample ID: 480-123762-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4S

## Lab Sample ID: 480-123762-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.043		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	99.8		0.50		mg/L	1		6010C	Total/NA
Chromium	0.017		0.0040		mg/L	1		6010C	Total/NA
Chloride	57.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	23.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	464		10.0		mg/L	1		SM 2540C	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-4D

## Lab Sample ID: 480-123762-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.042		0.0020		mg/L	1		6010C	Total/NA
Calcium	89.2		0.50		mg/L	1		6010C	Total/NA
Chloride	37.9		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.12		0.10		mg/L	2		300.0	Total/NA
Sulfate	27.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	418		10.0		mg/L	1		SM 2540C	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.8	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	25.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5S

## Lab Sample ID: 480-123762-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.061		0.0020		mg/L	1		6010C	Total/NA
Boron	0.024		0.020		mg/L	1		6010C	Total/NA
Calcium	88.4		0.50		mg/L	1		6010C	Total/NA
Chloride	43.2		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.12		0.10		mg/L	2		300.0	Total/NA
Sulfate	25.3		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	430		10.0		mg/L	1		SM 2540C	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: U-5D

## Lab Sample ID: 480-123762-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Calcium	81.6		0.50		mg/L	1		6010C	Total/NA
Chloride	27.7		1.0		mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: U-5D (Continued)

## Lab Sample ID: 480-123762-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.10		0.10		mg/L	2		300.0	Total/NA
Sulfate	28.6		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	396		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5S2

## Lab Sample ID: 480-123762-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.072		0.0020		mg/L	1		6010C	Total/NA
Boron	0.062		0.020		mg/L	1		6010C	Total/NA
Calcium	117		0.50		mg/L	1		6010C	Total/NA
Chloride	52.1		2.5		mg/L	5		300.0	Total/NA
Sulfate	47.2		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	556		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-5D

## Lab Sample ID: 480-123762-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.051		0.0020		mg/L	1		6010C	Total/NA
Boron	0.023		0.020		mg/L	1		6010C	Total/NA
Calcium	93.8		0.50		mg/L	1		6010C	Total/NA
Chloride	22.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	30.4		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	435		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.2	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3S

## Lab Sample ID: 480-123762-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.049		0.0020		mg/L	1		6010C	Total/NA
Boron	0.079		0.020		mg/L	1		6010C	Total/NA
Calcium	98.5		0.50		mg/L	1		6010C	Total/NA
Chloride	67.8		2.5		mg/L	5		300.0	Total/NA
Sulfate	47.4		10.0		mg/L	5		300.0	Total/NA
Total Dissolved Solids	537		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: D-3D

## Lab Sample ID: 480-123762-16

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: D-3D (Continued)

## Lab Sample ID: 480-123762-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.054		0.0020		mg/L	1		6010C	Total/NA
Boron	0.028		0.020		mg/L	1		6010C	Total/NA
Calcium	100		0.50		mg/L	1		6010C	Total/NA
Chloride	32.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	31.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	430		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	26.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: EQUIPMENT BLANK

## Lab Sample ID: 480-123762-17

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.0	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	23.8	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUPLICATE #1

## Lab Sample ID: 480-123762-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.061		0.0020		mg/L	1		6010C	Total/NA
Boron	0.022		0.020		mg/L	1		6010C	Total/NA
Calcium	88.2		0.50		mg/L	1		6010C	Total/NA
Chloride	43.7		1.0		mg/L	2		300.0	Total/NA
Fluoride	0.12		0.10		mg/L	2		300.0	Total/NA
Sulfate	25.2		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	448		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	23.9	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: FIELD BLANK #1

## Lab Sample ID: 480-123762-19

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.1	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

## Client Sample ID: DUPLICATE #2

## Lab Sample ID: 480-123762-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.053		0.0020		mg/L	1		6010C	Total/NA
Boron	0.027		0.020		mg/L	1		6010C	Total/NA
Calcium	99.6		0.50		mg/L	1		6010C	Total/NA
Chloride	32.7		1.0		mg/L	2		300.0	Total/NA
Sulfate	31.1		4.0		mg/L	2		300.0	Total/NA
Total Dissolved Solids	436		10.0		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.7	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-123762-21**

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.3	HF	0.1		SU	1		SM 4500 H+ B	Total/NA
Temperature	24.3	HF	0.001		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

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# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-1S**  
**Date Collected: 09/06/17 08:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-1**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		09/11/17 09:30	09/11/17 15:42	1
Boron	0.049		0.020		mg/L		09/11/17 09:30	09/11/17 15:42	1
Calcium	102		0.50		mg/L		09/11/17 09:30	09/11/17 15:42	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 11:44	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 15:42	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 15:42	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:10	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:10	1
Beryllium	ND	^	0.70		ug/L		09/11/17 09:08	09/11/17 20:10	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 20:10	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 20:10	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:10	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:10	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 20:10	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:31	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.9		1.0		mg/L			09/12/17 22:51	2
Fluoride	ND		0.10		mg/L			09/12/17 22:51	2
Sulfate	26.2		4.0		mg/L			09/12/17 22:51	2
Total Dissolved Solids	473		10.0		mg/L			09/07/17 20:29	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1		SU			09/10/17 14:38	1
Temperature	25.7	HF	0.001		Degrees C			09/10/17 14:38	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-1D**  
**Date Collected: 09/06/17 08:40**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-2**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.050		0.0020		mg/L		09/11/17 09:30	09/11/17 16:10	1
Boron	0.022		0.020		mg/L		09/11/17 09:30	09/11/17 16:10	1
Calcium	88.7		0.50		mg/L		09/11/17 09:30	09/11/17 16:10	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:11	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:10	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:10	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:16	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:16	1
Beryllium	ND	^	0.70		ug/L		09/11/17 09:08	09/11/17 20:16	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 20:16	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 20:16	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:16	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:16	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 20:16	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:33	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39.8		1.0		mg/L			09/12/17 23:00	2
Fluoride	ND		0.10		mg/L			09/12/17 23:00	2
Sulfate	27.9		4.0		mg/L			09/12/17 23:00	2
Total Dissolved Solids	437		10.0		mg/L			09/07/17 20:29	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1		SU			09/10/17 14:40	1
Temperature	25.7	HF	0.001		Degrees C			09/10/17 14:40	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-2S**  
**Date Collected: 09/06/17 09:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-3**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.048		0.0020		mg/L		09/11/17 09:30	09/11/17 16:13	1
Boron	0.027		0.020		mg/L		09/11/17 09:30	09/11/17 16:13	1
Calcium	98.3		0.50		mg/L		09/11/17 09:30	09/11/17 16:13	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:15	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:13	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:13	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:39	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:39	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 20:39	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 20:39	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 20:39	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:39	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 20:39	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 20:39	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:35	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.2		1.0		mg/L			09/12/17 23:08	2
Fluoride	ND		0.10		mg/L			09/12/17 23:08	2
Sulfate	27.2		4.0		mg/L			09/12/17 23:08	2
Total Dissolved Solids	460		10.0		mg/L			09/07/17 20:29	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			09/10/17 14:43	1
Temperature	25.8	HF	0.001		Degrees C			09/10/17 14:43	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-2D**  
**Date Collected: 09/06/17 09:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-4**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.048</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:17	1
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 15:44	1
<b>Calcium</b>	<b>84.0</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:17	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:18	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:17	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:17	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:06	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:06	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:06	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:06	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 21:06	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:06	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:06	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:06	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>31.9</b>		1.0		mg/L			09/12/17 23:16	2
Fluoride	ND		0.10		mg/L			09/12/17 23:16	2
<b>Sulfate</b>	<b>23.5</b>		4.0		mg/L			09/12/17 23:16	2
<b>Total Dissolved Solids</b>	<b>429</b>		10.0		mg/L			09/07/17 20:29	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			09/10/17 14:46	1
<b>Temperature</b>	<b>25.9</b>	<b>HF</b>	0.001		Degrees C			09/10/17 14:46	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-4S**  
**Date Collected: 09/06/17 09:40**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-5**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.067</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:21	1
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 15:48	1
<b>Calcium</b>	<b>95.1</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:21	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:22	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:21	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:21	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:12	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:12	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:12	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:12	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 21:12	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:12	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:12	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:12	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>45.5</b>		1.0		mg/L			09/12/17 23:24	2
Fluoride	ND		0.10		mg/L			09/12/17 23:24	2
<b>Sulfate</b>	<b>26.7</b>		4.0		mg/L			09/12/17 23:24	2
<b>Total Dissolved Solids</b>	<b>424</b>		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			09/10/17 14:49	1
<b>Temperature</b>	<b>26.0</b>	<b>HF</b>	0.001		Degrees C			09/10/17 14:49	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-4D**  
**Date Collected: 09/06/17 10:05**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-6**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.056</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:24	1
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 15:51	1
<b>Calcium</b>	<b>85.6</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:24	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:25	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:24	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:24	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:17	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:17	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:17	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:17	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 21:17	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:17	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:17	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:17	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:51	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>43.8</b>		1.0		mg/L			09/12/17 23:32	2
Fluoride	ND		0.10		mg/L			09/12/17 23:32	2
<b>Sulfate</b>	<b>25.6</b>		4.0		mg/L			09/12/17 23:32	2
<b>Total Dissolved Solids</b>	<b>418</b>		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			09/10/17 14:52	1
<b>Temperature</b>	<b>25.9</b>	<b>HF</b>	0.001		Degrees C			09/10/17 14:52	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-8**

**Date Collected: 09/06/17 10:20**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-7**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.054</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:28	1
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 15:55	1
<b>Calcium</b>	<b>65.1</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:28	1
<b>Chromium</b>	<b>0.0046</b>		0.0040		mg/L		09/11/17 09:30	09/12/17 12:29	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:28	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:28	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:23	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:23	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:23	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:23	1
<b>Cobalt</b>	<b>0.58</b>		0.30		ug/L		09/11/17 09:08	09/11/17 21:23	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:23	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:23	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:23	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>16.1</b>		1.0		mg/L			09/14/17 12:55	2
<b>Fluoride</b>	<b>0.11</b>		0.10		mg/L			09/14/17 12:55	2
<b>Sulfate</b>	<b>33.0</b>		4.0		mg/L			09/14/17 12:55	2
<b>Total Dissolved Solids</b>	<b>311</b>		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>8.1</b>	<b>HF</b>	0.1		SU			09/10/17 14:55	1
<b>Temperature</b>	<b>25.7</b>	<b>HF</b>	0.001		Degrees C			09/10/17 14:55	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-9**

**Date Collected: 09/06/17 10:45**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-8**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.058		0.0020		mg/L		09/11/17 09:30	09/11/17 16:42	1
Boron	0.021		0.020		mg/L		09/11/17 09:30	09/11/17 16:42	1
Calcium	83.5		0.50		mg/L		09/11/17 09:30	09/11/17 16:42	1
Chromium	0.0068		0.0040		mg/L		09/11/17 09:30	09/12/17 12:33	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:42	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:42	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:28	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:28	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:28	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:28	1
Cobalt	0.88		0.30		ug/L		09/11/17 09:08	09/11/17 21:28	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:28	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:28	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:28	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:55	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39.9		1.0		mg/L			09/14/17 13:03	2
Fluoride	0.11		0.10		mg/L			09/14/17 13:03	2
Sulfate	23.3		4.0		mg/L			09/14/17 13:03	2
Total Dissolved Solids	450		10.0		mg/L			09/12/17 21:38	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1		SU			09/10/17 14:57	1
Temperature	25.9	HF	0.001		Degrees C			09/10/17 14:57	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: U-4S**  
**Date Collected: 09/05/17 09:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-9**  
**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.043		0.0020		mg/L		09/11/17 09:30	09/11/17 16:46	1
Boron	0.023		0.020		mg/L		09/11/17 09:30	09/11/17 16:46	1
Calcium	99.8		0.50		mg/L		09/11/17 09:30	09/11/17 16:46	1
Chromium	0.017		0.0040		mg/L		09/11/17 09:30	09/12/17 12:47	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:46	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:46	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:52	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:52	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:52	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:52	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 21:52	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:52	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:52	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:52	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.7		1.0		mg/L			09/14/17 13:11	2
Fluoride	ND		0.10		mg/L			09/14/17 13:11	2
Sulfate	23.4		4.0		mg/L			09/14/17 13:11	2
Total Dissolved Solids	464		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 15:00	1
Temperature	25.9	HF	0.001		Degrees C			09/10/17 15:00	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: U-4D**  
**Date Collected: 09/05/17 09:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-10**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.042</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:49	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 16:49	1
<b>Calcium</b>	<b>89.2</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:49	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:50	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:49	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:49	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:57	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:57	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 21:57	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 21:57	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 21:57	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:57	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 21:57	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 21:57	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:58	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>37.9</b>		1.0		mg/L			09/14/17 13:19	2
<b>Fluoride</b>	<b>0.12</b>		0.10		mg/L			09/14/17 13:19	2
<b>Sulfate</b>	<b>27.4</b>		4.0		mg/L			09/14/17 13:19	2
<b>Total Dissolved Solids</b>	<b>418</b>		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1		SU			09/10/17 15:03	1
<b>Temperature</b>	<b>25.9</b>	<b>HF</b>	0.001		Degrees C			09/10/17 15:03	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: U-5S**  
**Date Collected: 09/05/17 10:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-11**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.061		0.0020		mg/L		09/11/17 09:30	09/11/17 16:53	1
Boron	0.024		0.020		mg/L		09/11/17 09:30	09/11/17 16:53	1
Calcium	88.4		0.50		mg/L		09/11/17 09:30	09/11/17 16:53	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:54	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:53	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:53	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:03	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:03	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:03	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:03	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:03	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:03	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:03	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:03	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.2		1.0		mg/L			09/14/17 13:28	2
Fluoride	0.12		0.10		mg/L			09/14/17 13:28	2
Sulfate	25.3		4.0		mg/L			09/14/17 13:28	2
Total Dissolved Solids	430		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 15:09	1
Temperature	26.1	HF	0.001		Degrees C			09/10/17 15:09	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: U-5D**  
**Date Collected: 09/05/17 10:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-12**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.053</b>		0.0020		mg/L		09/11/17 09:30	09/11/17 16:56	1
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 15:58	1
<b>Calcium</b>	<b>81.6</b>		0.50		mg/L		09/11/17 09:30	09/11/17 16:56	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 12:57	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 16:56	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 16:56	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:08	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:08	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:08	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:08	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:08	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:08	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:08	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:02	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>27.7</b>		1.0		mg/L			09/14/17 13:36	2
<b>Fluoride</b>	<b>0.10</b>		0.10		mg/L			09/14/17 13:36	2
<b>Sulfate</b>	<b>28.6</b>		4.0		mg/L			09/14/17 13:36	2
<b>Total Dissolved Solids</b>	<b>396</b>		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>7.7</b>	<b>HF</b>	0.1		SU			09/10/17 15:11	1
<b>Temperature</b>	<b>26.1</b>	<b>HF</b>	0.001		Degrees C			09/10/17 15:11	1



# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-5S2**  
**Date Collected: 09/05/17 11:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-13**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.072		0.0020		mg/L		09/11/17 09:30	09/11/17 17:00	1
Boron	0.062		0.020		mg/L		09/11/17 09:30	09/11/17 17:00	1
Calcium	117		0.50		mg/L		09/11/17 09:30	09/11/17 17:00	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:01	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:00	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:00	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:13	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:13	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:13	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:13	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:13	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:13	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:13	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:13	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:04	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.1		2.5		mg/L			09/14/17 14:16	5
Fluoride	ND		0.25		mg/L			09/14/17 14:16	5
Sulfate	47.2		10.0		mg/L			09/14/17 14:16	5
Total Dissolved Solids	556		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			09/10/17 15:14	1
Temperature	26.1	HF	0.001		Degrees C			09/10/17 15:14	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-5D**  
**Date Collected: 09/05/17 12:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-14**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.051		0.0020		mg/L		09/11/17 09:30	09/11/17 17:04	1
Boron	0.023		0.020		mg/L		09/11/17 09:30	09/11/17 17:04	1
Calcium	93.8		0.50		mg/L		09/11/17 09:30	09/11/17 17:04	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:04	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:04	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:04	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:19	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:19	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:19	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:19	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:19	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:19	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:19	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:19	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22.8		1.0		mg/L			09/14/17 14:25	2
Fluoride	ND		0.10		mg/L			09/14/17 14:25	2
Sulfate	30.4		4.0		mg/L			09/14/17 14:25	2
Total Dissolved Solids	435		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 15:17	1
Temperature	26.2	HF	0.001		Degrees C			09/10/17 15:17	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-3S**

**Date Collected: 09/05/17 12:35**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-15**

**Matrix: Water**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.049		0.0020		mg/L		09/11/17 09:30	09/11/17 17:07	1
Boron	0.079		0.020		mg/L		09/11/17 09:30	09/11/17 17:07	1
Calcium	98.5		0.50		mg/L		09/11/17 09:30	09/11/17 17:07	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:08	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:07	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:07	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:24	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:24	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:24	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:24	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:24	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:24	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:24	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:24	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	67.8		2.5		mg/L			09/14/17 14:33	5
Fluoride	ND		0.25		mg/L			09/14/17 14:33	5
Sulfate	47.4		10.0		mg/L			09/14/17 14:33	5
Total Dissolved Solids	537		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 15:20	1
Temperature	26.3	HF	0.001		Degrees C			09/10/17 15:20	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-3D**  
**Date Collected: 09/05/17 12:55**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-16**  
**Matrix: Water**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.054		0.0020		mg/L		09/11/17 09:30	09/11/17 17:11	1
Boron	0.028		0.020		mg/L		09/11/17 09:30	09/11/17 17:11	1
Calcium	100		0.50		mg/L		09/11/17 09:30	09/11/17 17:11	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:11	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:11	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:11	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:30	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:30	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:30	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:30	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:30	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:30	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:30	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:30	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:15	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.8		1.0		mg/L			09/14/17 14:41	2
Fluoride	ND		0.10		mg/L			09/14/17 14:41	2
Sulfate	31.2		4.0		mg/L			09/14/17 14:41	2
Total Dissolved Solids	430		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 15:23	1
Temperature	26.3	HF	0.001		Degrees C			09/10/17 15:23	1

# Client Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-123762-17**

**Date Collected: 09/06/17 11:15**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

### Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		09/11/17 09:30	09/11/17 17:25	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 17:25	1
Calcium	ND		0.50		mg/L		09/11/17 09:30	09/11/17 17:25	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:15	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:25	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:25	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:35	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:35	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:35	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:35	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:35	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:35	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:35	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:35	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:16	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			09/14/17 14:49	1
Fluoride	ND		0.050		mg/L			09/14/17 14:49	1
Sulfate	ND		2.0		mg/L			09/14/17 14:49	1
Total Dissolved Solids	ND		10.0		mg/L			09/11/17 08:10	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.0	HF	0.1		SU			09/10/17 13:36	1
Temperature	23.8	HF	0.001		Degrees C			09/10/17 13:36	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-123762-18**

**Date Collected: 09/05/17 00:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.061		0.0020		mg/L		09/11/17 09:30	09/11/17 17:29	1
Boron	0.022		0.020		mg/L		09/11/17 09:30	09/11/17 17:29	1
Calcium	88.2		0.50		mg/L		09/11/17 09:30	09/11/17 17:29	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:29	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:29	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:29	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:41	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:41	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 22:41	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 22:41	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 22:41	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:41	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 22:41	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 22:41	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.7		1.0		mg/L			09/14/17 14:57	2
Fluoride	0.12		0.10		mg/L			09/14/17 14:57	2
Sulfate	25.2		4.0		mg/L			09/14/17 14:57	2
Total Dissolved Solids	448		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1		SU			09/10/17 13:39	1
Temperature	23.9	HF	0.001		Degrees C			09/10/17 13:39	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-123762-19**

**Date Collected: 09/05/17 11:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		09/11/17 09:30	09/11/17 17:32	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 17:32	1
Calcium	ND		0.50		mg/L		09/11/17 09:30	09/11/17 17:32	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:32	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:32	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:32	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:04	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:04	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 23:04	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 23:04	1
Cobalt	ND	^	0.30		ug/L		09/11/17 09:08	09/11/17 23:04	1
Molybdenum	ND	^	1.0		ug/L		09/11/17 09:08	09/11/17 23:04	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:04	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 23:04	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			09/14/17 15:05	1
Fluoride	ND		0.050		mg/L			09/14/17 15:05	1
Sulfate	ND		2.0		mg/L			09/14/17 15:05	1
Total Dissolved Solids	ND		10.0		mg/L			09/11/17 05:44	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.3	HF	0.1		SU			09/10/17 13:41	1
Temperature	24.1	HF	0.001		Degrees C			09/10/17 13:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-123762-20**

**Date Collected: 09/05/17 00:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.053		0.0020		mg/L		09/11/17 09:30	09/11/17 17:36	1
Boron	0.027		0.020		mg/L		09/11/17 09:30	09/11/17 17:36	1
Calcium	99.6		0.50		mg/L		09/11/17 09:30	09/11/17 17:36	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 13:36	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 17:36	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 17:36	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:09	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:09	1
Beryllium	ND		0.70		ug/L		09/11/17 09:08	09/11/17 23:09	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 23:09	1
Cobalt	ND	^	0.30		ug/L		09/11/17 09:08	09/11/17 23:09	1
Molybdenum	ND	^	1.0		ug/L		09/11/17 09:08	09/11/17 23:09	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 23:09	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 23:09	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.7		1.0		mg/L			09/14/17 15:18	2
Fluoride	ND		0.10		mg/L			09/14/17 15:18	2
Sulfate	31.1		4.0		mg/L			09/14/17 15:18	2
Total Dissolved Solids	436		10.0		mg/L			09/11/17 05:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1		SU			09/10/17 13:44	1
Temperature	24.3	HF	0.001		Degrees C			09/10/17 13:44	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-123762-21**

**Date Collected: 09/05/17 13:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		09/11/17 09:30	09/11/17 20:23	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 20:23	1
Calcium	ND		0.50		mg/L		09/11/17 09:30	09/11/17 20:23	1
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 09:11	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 20:23	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 20:23	1

**Method: 6020A - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:51	1
Arsenic	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:51	1
Beryllium	ND		0.70		ug/L		09/12/17 08:14	09/12/17 16:51	1
Cadmium	ND		0.50		ug/L		09/12/17 08:14	09/12/17 16:51	1
Cobalt	ND		0.30		ug/L		09/12/17 08:14	09/12/17 16:51	1
Molybdenum	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:51	1
Selenium	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:51	1
Thallium	ND		0.20		ug/L		09/12/17 08:14	09/12/17 16:51	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			09/14/17 15:26	1
Fluoride	ND		0.050		mg/L			09/14/17 15:26	1
Sulfate	ND		2.0		mg/L			09/14/17 15:26	1
Total Dissolved Solids	ND		10.0		mg/L			09/11/17 05:44	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.3	HF	0.1		SU			09/10/17 13:47	1
Temperature	24.3	HF	0.001		Degrees C			09/10/17 13:47	1

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-376035/1-A**  
**Matrix: Water**  
**Analysis Batch: 376295**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0020		mg/L		09/11/17 09:30	09/11/17 15:35	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 15:35	1
Calcium	ND		0.50		mg/L		09/11/17 09:30	09/11/17 15:35	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 15:35	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 15:35	1

**Lab Sample ID: MB 480-376035/1-A**  
**Matrix: Water**  
**Analysis Batch: 376515**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 11:37	1

**Lab Sample ID: LCS 480-376035/2-A**  
**Matrix: Water**  
**Analysis Batch: 376295**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.200	0.201		mg/L		101	80 - 120
Boron	0.200	0.202		mg/L		101	80 - 120
Calcium	10.0	9.70		mg/L		97	80 - 120
Lead	0.200	0.193		mg/L		97	80 - 120

**Lab Sample ID: LCS 480-376035/2-A**  
**Matrix: Water**  
**Analysis Batch: 376515**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.192		mg/L		96	80 - 120

**Lab Sample ID: 480-123762-1 MS**  
**Matrix: Water**  
**Analysis Batch: 376295**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.054		0.200	0.262		mg/L		104	75 - 125
Boron	0.049		0.200	0.254		mg/L		103	75 - 125
Calcium	102		10.0	117.9	4	mg/L		157	75 - 125
Lead	ND		0.200	0.203		mg/L		102	75 - 125

**Lab Sample ID: 480-123762-1 MS**  
**Matrix: Water**  
**Analysis Batch: 376515**

**Client Sample ID: D-1S**  
**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	ND		0.200	0.192		mg/L		96	75 - 125

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 480-123762-1 MSD**

**Matrix: Water**  
**Analysis Batch: 376295**

**Client Sample ID: D-1S**

**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		
				Result	Qualifier				Limits	RPD	Limit
Barium	0.054		0.200	0.252		mg/L		99	75 - 125	4	20
Boron	0.049		0.200	0.245		mg/L		98	75 - 125	4	20
Calcium	102		10.0	107.8	4	mg/L		55	75 - 125	9	20
Lead	ND		0.200	0.197		mg/L		99	75 - 125	3	20

**Lab Sample ID: 480-123762-1 MSD**

**Matrix: Water**  
**Analysis Batch: 376515**

**Client Sample ID: D-1S**

**Prep Type: Total/NA**  
**Prep Batch: 376035**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		
				Result	Qualifier				Limits	RPD	Limit
Chromium	ND		0.200	0.188		mg/L		94	75 - 125	2	20

**Lab Sample ID: MB 480-376039/1-A**

**Matrix: Water**  
**Analysis Batch: 376299**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 376039**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	ND		0.0020		mg/L		09/11/17 09:30	09/11/17 20:16	1
Boron	ND		0.020		mg/L		09/11/17 09:30	09/11/17 20:16	1
Calcium	ND		0.50		mg/L		09/11/17 09:30	09/11/17 20:16	1
Lead	ND		0.010		mg/L		09/11/17 09:30	09/11/17 20:16	1
Lithium	ND		0.030		mg/L		09/11/17 09:30	09/11/17 20:16	1

**Lab Sample ID: MB 480-376039/1-A**

**Matrix: Water**  
**Analysis Batch: 376513**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 376039**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chromium	ND		0.0040		mg/L		09/11/17 09:30	09/12/17 09:04	1

**Lab Sample ID: LCS 480-376039/2-A**

**Matrix: Water**  
**Analysis Batch: 376299**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 376039**

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	
Barium	0.200	0.214		mg/L		107	80 - 120	
Boron	0.200	0.204		mg/L		102	80 - 120	
Calcium	10.0	9.54		mg/L		95	80 - 120	
Lead	0.200	0.197		mg/L		99	80 - 120	

**Lab Sample ID: LCS 480-376039/2-A**

**Matrix: Water**  
**Analysis Batch: 376513**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 376039**

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	
Chromium	0.200	0.198		mg/L		99	80 - 120	

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-377258/1-A**  
**Matrix: Water**  
**Analysis Batch: 377514**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 377258**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.020		mg/L		09/18/17 08:58	09/18/17 14:01	1

**Lab Sample ID: LCS 480-377258/2-A**  
**Matrix: Water**  
**Analysis Batch: 377514**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 377258**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.200	0.205		mg/L		102	80 - 120

**Lab Sample ID: LCSD 480-377258/24-A**  
**Matrix: Water**  
**Analysis Batch: 377514**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 377258**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.200	0.203		mg/L		101	80 - 120	1	20

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-376038/1-A**  
**Matrix: Water**  
**Analysis Batch: 376328**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/11/17 09:08	09/11/17 19:59	1
Arsenic	ND		1.0		ug/L		09/11/17 09:08	09/11/17 19:59	1
Beryllium	ND	^	0.70		ug/L		09/11/17 09:08	09/11/17 19:59	1
Cadmium	ND		0.50		ug/L		09/11/17 09:08	09/11/17 19:59	1
Cobalt	ND		0.30		ug/L		09/11/17 09:08	09/11/17 19:59	1
Molybdenum	ND		1.0		ug/L		09/11/17 09:08	09/11/17 19:59	1
Selenium	ND		1.0		ug/L		09/11/17 09:08	09/11/17 19:59	1
Thallium	ND		0.20		ug/L		09/11/17 09:08	09/11/17 19:59	1

**Lab Sample ID: LCS 480-376038/2-A**  
**Matrix: Water**  
**Analysis Batch: 376328**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	20.0	19.48		ug/L		97	80 - 120
Arsenic	20.0	19.18		ug/L		96	80 - 120
Cadmium	20.0	19.36		ug/L		97	80 - 120
Cobalt	20.0	19.90		ug/L		99	80 - 120
Molybdenum	20.0	20.11		ug/L		101	80 - 120
Selenium	20.0	19.17		ug/L		96	80 - 120
Thallium	20.0	19.16		ug/L		96	80 - 120

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# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 480-376038/2-A**  
**Matrix: Water**  
**Analysis Batch: 376493**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Beryllium	20.0	19.94		ug/L		100	80 - 120

**Lab Sample ID: 480-123762-3 MS**  
**Matrix: Water**  
**Analysis Batch: 376328**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**  
**Prep Batch: 376038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		20.0	19.71		ug/L		99	75 - 125
Arsenic	ND		20.0	20.73		ug/L		102	75 - 125
Beryllium	ND		20.0	20.16		ug/L		101	75 - 125
Cadmium	ND		20.0	19.10		ug/L		95	75 - 125
Cobalt	ND		20.0	19.67		ug/L		98	75 - 125
Molybdenum	ND		20.0	20.82		ug/L		103	75 - 125
Selenium	ND		20.0	20.38		ug/L		98	75 - 125
Thallium	ND		20.0	19.35		ug/L		97	75 - 125

**Lab Sample ID: 480-123762-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 376328**

**Client Sample ID: D-2S**  
**Prep Type: Total/NA**  
**Prep Batch: 376038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		20.0	19.84		ug/L		99	75 - 125	1	20
Arsenic	ND		20.0	20.24		ug/L		99	75 - 125	2	20
Beryllium	ND		20.0	20.07		ug/L		100	75 - 125	0	20
Cadmium	ND		20.0	18.77		ug/L		93	75 - 125	2	20
Cobalt	ND		20.0	19.26		ug/L		96	75 - 125	2	20
Molybdenum	ND		20.0	20.70		ug/L		103	75 - 125	1	20
Selenium	ND		20.0	20.11		ug/L		96	75 - 125	1	20
Thallium	ND		20.0	19.19		ug/L		96	75 - 125	1	20

**Lab Sample ID: MB 480-376142/1-A**  
**Matrix: Water**  
**Analysis Batch: 376496**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376142**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:40	1
Arsenic	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:40	1
Beryllium	ND		0.70		ug/L		09/12/17 08:14	09/12/17 16:40	1
Cadmium	ND		0.50		ug/L		09/12/17 08:14	09/12/17 16:40	1
Cobalt	ND		0.30		ug/L		09/12/17 08:14	09/12/17 16:40	1
Molybdenum	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:40	1
Selenium	ND		1.0		ug/L		09/12/17 08:14	09/12/17 16:40	1
Thallium	ND		0.20		ug/L		09/12/17 08:14	09/12/17 16:40	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 6020A - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 480-376142/2-A**  
**Matrix: Water**  
**Analysis Batch: 376496**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376142**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	20.0	19.26		ug/L		96	80 - 120
Arsenic	20.0	19.72		ug/L		99	80 - 120
Beryllium	20.0	19.36		ug/L		97	80 - 120
Cadmium	20.0	18.80		ug/L		94	80 - 120
Cobalt	20.0	19.83		ug/L		99	80 - 120
Molybdenum	20.0	19.43		ug/L		97	80 - 120
Selenium	20.0	17.60		ug/L		88	80 - 120
Thallium	20.0	19.79		ug/L		99	80 - 120

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 480-376118/1-A**  
**Matrix: Water**  
**Analysis Batch: 376216**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376118**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 15:27	1

**Lab Sample ID: LCS 480-376118/2-A**  
**Matrix: Water**  
**Analysis Batch: 376216**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 376118**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	6.67	6.23		ug/L		93	80 - 120

**Lab Sample ID: 480-123762-4 MS**  
**Matrix: Water**  
**Analysis Batch: 376216**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**  
**Prep Batch: 376118**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		6.67	6.27		ug/L		94	80 - 120

**Lab Sample ID: 480-123762-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 376216**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**  
**Prep Batch: 376118**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	ND		6.67	6.27		ug/L		94	80 - 120	0	20

**Lab Sample ID: MB 480-376121/1-A**  
**Matrix: Water**  
**Analysis Batch: 376216**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 376121**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		09/11/17 12:00	09/11/17 16:24	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID:** LCS 480-376121/2-A  
**Matrix:** Water  
**Analysis Batch:** 376216

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA  
**Prep Batch:** 376121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	6.67	6.28		ug/L		94	80 - 120

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID:** MB 480-376408/28  
**Matrix:** Water  
**Analysis Batch:** 376408

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			09/12/17 20:57	1
Fluoride	ND		0.050		mg/L			09/12/17 20:57	1
Sulfate	ND		2.0		mg/L			09/12/17 20:57	1

**Lab Sample ID:** LCS 480-376408/27  
**Matrix:** Water  
**Analysis Batch:** 376408

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.42		mg/L		101	90 - 110
Fluoride	5.00	4.69		mg/L		94	90 - 110
Sulfate	50.0	48.54		mg/L		97	90 - 110

**Lab Sample ID:** 480-123762-6 MS  
**Matrix:** Water  
**Analysis Batch:** 376408

**Client Sample ID:** D-4D  
**Prep Type:** Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	43.8		100	141.7		mg/L		98	81 - 120
Fluoride	ND		10.0	9.33		mg/L		93	82 - 120
Sulfate	25.6		100	122.5		mg/L		97	80 - 120

**Lab Sample ID:** MB 480-376889/4  
**Matrix:** Water  
**Analysis Batch:** 376889

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			09/14/17 12:47	1
Fluoride	ND		0.050		mg/L			09/14/17 12:47	1
Sulfate	ND		2.0		mg/L			09/14/17 12:47	1

**Lab Sample ID:** LCS 480-376889/3  
**Matrix:** Water  
**Analysis Batch:** 376889

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.64		mg/L		99	90 - 110
Fluoride	5.00	4.87		mg/L		97	90 - 110
Sulfate	50.0	47.28		mg/L		95	90 - 110

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 480-123762-12 MS**

**Matrix: Water**  
**Analysis Batch: 376889**

**Client Sample ID: U-5D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	27.7		100	126.2		mg/L		99	81 - 120
Fluoride	0.10		10.0	9.86		mg/L		98	82 - 120
Sulfate	28.6		100	122.8		mg/L		94	80 - 120

**Lab Sample ID: 480-123762-12 MSD**

**Matrix: Water**  
**Analysis Batch: 376889**

**Client Sample ID: U-5D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	27.7		100	126.7		mg/L		99	81 - 120	0	20
Fluoride	0.10		10.0	9.93		mg/L		98	82 - 120	1	20
Sulfate	28.6		100	123.2		mg/L		95	80 - 120	0	20

**Lab Sample ID: 480-123762-21 MS**

**Matrix: Water**  
**Analysis Batch: 376889**

**Client Sample ID: FIELD BLANK #2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		50.0	49.03		mg/L		98	81 - 120
Fluoride	ND		5.00	4.80		mg/L		96	82 - 120
Sulfate	ND		50.0	46.49		mg/L		93	80 - 120

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 480-375763/1**

**Matrix: Water**  
**Analysis Batch: 375763**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			09/07/17 20:29	1

**Lab Sample ID: LCS 480-375763/2**

**Matrix: Water**  
**Analysis Batch: 375763**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	524	508.0		mg/L		97	85 - 115

**Lab Sample ID: 480-123762-4 DU**

**Matrix: Water**  
**Analysis Batch: 375763**

**Client Sample ID: D-2D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	429		412.0		mg/L		4	10

TestAmerica Buffalo



# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: MB 480-376034/1**  
**Matrix: Water**  
**Analysis Batch: 376034**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			09/11/17 05:44	1

**Lab Sample ID: LCS 480-376034/2**  
**Matrix: Water**  
**Analysis Batch: 376034**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	513	511.0		mg/L		100	85 - 115

**Lab Sample ID: 480-123762-5 DU**  
**Matrix: Water**  
**Analysis Batch: 376034**

**Client Sample ID: D-4S**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	424		428.0		mg/L		0.9	10

**Lab Sample ID: 480-123762-20 DU**  
**Matrix: Water**  
**Analysis Batch: 376034**

**Client Sample ID: DUPLICATE #2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	436		437.0		mg/L		0.2	10

**Lab Sample ID: MB 480-376061/1**  
**Matrix: Water**  
**Analysis Batch: 376061**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			09/11/17 08:10	1

**Lab Sample ID: LCS 480-376061/2**  
**Matrix: Water**  
**Analysis Batch: 376061**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	513	528.0		mg/L		103	85 - 115

**Lab Sample ID: MB 480-376467/1**  
**Matrix: Water**  
**Analysis Batch: 376467**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			09/12/17 21:38	1

**Lab Sample ID: LCS 480-376467/2**  
**Matrix: Water**  
**Analysis Batch: 376467**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	513	498.0		mg/L		97	85 - 115

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# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 480-376021/1  
Matrix: Water  
Analysis Batch: 376021

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 480-376021/23  
Matrix: Water  
Analysis Batch: 376021

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Metals

### Prep Batch: 376035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	3005A	
480-123762-2	D-1D	Total/NA	Water	3005A	
480-123762-3	D-2S	Total/NA	Water	3005A	
480-123762-4	D-2D	Total/NA	Water	3005A	
480-123762-5	D-4S	Total/NA	Water	3005A	
480-123762-6	D-4D	Total/NA	Water	3005A	
480-123762-7	D-8	Total/NA	Water	3005A	
480-123762-8	D-9	Total/NA	Water	3005A	
480-123762-9	U-4S	Total/NA	Water	3005A	
480-123762-10	U-4D	Total/NA	Water	3005A	
480-123762-11	U-5S	Total/NA	Water	3005A	
480-123762-12	U-5D	Total/NA	Water	3005A	
480-123762-13	D-5S2	Total/NA	Water	3005A	
480-123762-14	D-5D	Total/NA	Water	3005A	
480-123762-15	D-3S	Total/NA	Water	3005A	
480-123762-16	D-3D	Total/NA	Water	3005A	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	3005A	
480-123762-18	DUPLICATE #1	Total/NA	Water	3005A	
480-123762-19	FIELD BLANK #1	Total/NA	Water	3005A	
480-123762-20	DUPLICATE #2	Total/NA	Water	3005A	
MB 480-376035/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-376035/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-123762-1 MS	D-1S	Total/NA	Water	3005A	
480-123762-1 MSD	D-1S	Total/NA	Water	3005A	

### Prep Batch: 376038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	3020A	
480-123762-2	D-1D	Total/NA	Water	3020A	
480-123762-3	D-2S	Total/NA	Water	3020A	
480-123762-4	D-2D	Total/NA	Water	3020A	
480-123762-5	D-4S	Total/NA	Water	3020A	
480-123762-6	D-4D	Total/NA	Water	3020A	
480-123762-7	D-8	Total/NA	Water	3020A	
480-123762-8	D-9	Total/NA	Water	3020A	
480-123762-9	U-4S	Total/NA	Water	3020A	
480-123762-10	U-4D	Total/NA	Water	3020A	
480-123762-11	U-5S	Total/NA	Water	3020A	
480-123762-12	U-5D	Total/NA	Water	3020A	
480-123762-13	D-5S2	Total/NA	Water	3020A	
480-123762-14	D-5D	Total/NA	Water	3020A	
480-123762-15	D-3S	Total/NA	Water	3020A	
480-123762-16	D-3D	Total/NA	Water	3020A	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	3020A	
480-123762-18	DUPLICATE #1	Total/NA	Water	3020A	
480-123762-19	FIELD BLANK #1	Total/NA	Water	3020A	
480-123762-20	DUPLICATE #2	Total/NA	Water	3020A	
MB 480-376038/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-376038/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-123762-3 MS	D-2S	Total/NA	Water	3020A	
480-123762-3 MSD	D-2S	Total/NA	Water	3020A	

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# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Prep Batch: 376039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	3005A	
MB 480-376039/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-376039/2-A	Lab Control Sample	Total/NA	Water	3005A	

## Prep Batch: 376118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	7470A	
480-123762-2	D-1D	Total/NA	Water	7470A	
480-123762-3	D-2S	Total/NA	Water	7470A	
480-123762-4	D-2D	Total/NA	Water	7470A	
480-123762-5	D-4S	Total/NA	Water	7470A	
480-123762-6	D-4D	Total/NA	Water	7470A	
480-123762-7	D-8	Total/NA	Water	7470A	
480-123762-8	D-9	Total/NA	Water	7470A	
480-123762-9	U-4S	Total/NA	Water	7470A	
480-123762-10	U-4D	Total/NA	Water	7470A	
480-123762-11	U-5S	Total/NA	Water	7470A	
480-123762-12	U-5D	Total/NA	Water	7470A	
480-123762-13	D-5S2	Total/NA	Water	7470A	
480-123762-14	D-5D	Total/NA	Water	7470A	
480-123762-15	D-3S	Total/NA	Water	7470A	
480-123762-16	D-3D	Total/NA	Water	7470A	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	7470A	
480-123762-18	DUPLICATE #1	Total/NA	Water	7470A	
480-123762-19	FIELD BLANK #1	Total/NA	Water	7470A	
480-123762-20	DUPLICATE #2	Total/NA	Water	7470A	
MB 480-376118/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-376118/2-A	Lab Control Sample	Total/NA	Water	7470A	
480-123762-4 MS	D-2D	Total/NA	Water	7470A	
480-123762-4 MSD	D-2D	Total/NA	Water	7470A	

## Prep Batch: 376121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	7470A	
MB 480-376121/1-A	Method Blank	Total/NA	Water	7470A	
LCS 480-376121/2-A	Lab Control Sample	Total/NA	Water	7470A	

## Prep Batch: 376142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	3020A	
MB 480-376142/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-376142/2-A	Lab Control Sample	Total/NA	Water	3020A	

## Analysis Batch: 376216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	7470A	376118
480-123762-2	D-1D	Total/NA	Water	7470A	376118
480-123762-3	D-2S	Total/NA	Water	7470A	376118
480-123762-4	D-2D	Total/NA	Water	7470A	376118
480-123762-5	D-4S	Total/NA	Water	7470A	376118
480-123762-6	D-4D	Total/NA	Water	7470A	376118
480-123762-7	D-8	Total/NA	Water	7470A	376118
480-123762-8	D-9	Total/NA	Water	7470A	376118

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Metals (Continued)

### Analysis Batch: 376216 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-9	U-4S	Total/NA	Water	7470A	376118
480-123762-10	U-4D	Total/NA	Water	7470A	376118
480-123762-11	U-5S	Total/NA	Water	7470A	376118
480-123762-12	U-5D	Total/NA	Water	7470A	376118
480-123762-13	D-5S2	Total/NA	Water	7470A	376118
480-123762-14	D-5D	Total/NA	Water	7470A	376118
480-123762-15	D-3S	Total/NA	Water	7470A	376118
480-123762-16	D-3D	Total/NA	Water	7470A	376118
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	7470A	376118
480-123762-18	DUPLICATE #1	Total/NA	Water	7470A	376118
480-123762-19	FIELD BLANK #1	Total/NA	Water	7470A	376118
480-123762-20	DUPLICATE #2	Total/NA	Water	7470A	376118
480-123762-21	FIELD BLANK #2	Total/NA	Water	7470A	376121
MB 480-376118/1-A	Method Blank	Total/NA	Water	7470A	376118
MB 480-376121/1-A	Method Blank	Total/NA	Water	7470A	376121
LCS 480-376118/2-A	Lab Control Sample	Total/NA	Water	7470A	376118
LCS 480-376121/2-A	Lab Control Sample	Total/NA	Water	7470A	376121
480-123762-4 MS	D-2D	Total/NA	Water	7470A	376118
480-123762-4 MSD	D-2D	Total/NA	Water	7470A	376118

### Analysis Batch: 376295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	6010C	376035
480-123762-2	D-1D	Total/NA	Water	6010C	376035
480-123762-3	D-2S	Total/NA	Water	6010C	376035
480-123762-4	D-2D	Total/NA	Water	6010C	376035
480-123762-5	D-4S	Total/NA	Water	6010C	376035
480-123762-6	D-4D	Total/NA	Water	6010C	376035
480-123762-7	D-8	Total/NA	Water	6010C	376035
480-123762-8	D-9	Total/NA	Water	6010C	376035
480-123762-9	U-4S	Total/NA	Water	6010C	376035
480-123762-10	U-4D	Total/NA	Water	6010C	376035
480-123762-11	U-5S	Total/NA	Water	6010C	376035
480-123762-12	U-5D	Total/NA	Water	6010C	376035
480-123762-13	D-5S2	Total/NA	Water	6010C	376035
480-123762-14	D-5D	Total/NA	Water	6010C	376035
480-123762-15	D-3S	Total/NA	Water	6010C	376035
480-123762-16	D-3D	Total/NA	Water	6010C	376035
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	6010C	376035
480-123762-18	DUPLICATE #1	Total/NA	Water	6010C	376035
480-123762-19	FIELD BLANK #1	Total/NA	Water	6010C	376035
480-123762-20	DUPLICATE #2	Total/NA	Water	6010C	376035
MB 480-376035/1-A	Method Blank	Total/NA	Water	6010C	376035
LCS 480-376035/2-A	Lab Control Sample	Total/NA	Water	6010C	376035
480-123762-1 MS	D-1S	Total/NA	Water	6010C	376035
480-123762-1 MSD	D-1S	Total/NA	Water	6010C	376035

### Analysis Batch: 376299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	6010C	376039
MB 480-376039/1-A	Method Blank	Total/NA	Water	6010C	376039

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Metals (Continued)

### Analysis Batch: 376299 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-376039/2-A	Lab Control Sample	Total/NA	Water	6010C	376039

### Analysis Batch: 376328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	6020A	376038
480-123762-2	D-1D	Total/NA	Water	6020A	376038
480-123762-3	D-2S	Total/NA	Water	6020A	376038
480-123762-4	D-2D	Total/NA	Water	6020A	376038
480-123762-5	D-4S	Total/NA	Water	6020A	376038
480-123762-6	D-4D	Total/NA	Water	6020A	376038
480-123762-7	D-8	Total/NA	Water	6020A	376038
480-123762-8	D-9	Total/NA	Water	6020A	376038
480-123762-9	U-4S	Total/NA	Water	6020A	376038
480-123762-10	U-4D	Total/NA	Water	6020A	376038
480-123762-11	U-5S	Total/NA	Water	6020A	376038
480-123762-12	U-5D	Total/NA	Water	6020A	376038
480-123762-13	D-5S2	Total/NA	Water	6020A	376038
480-123762-14	D-5D	Total/NA	Water	6020A	376038
480-123762-15	D-3S	Total/NA	Water	6020A	376038
480-123762-16	D-3D	Total/NA	Water	6020A	376038
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	6020A	376038
480-123762-18	DUPLICATE #1	Total/NA	Water	6020A	376038
480-123762-19	FIELD BLANK #1	Total/NA	Water	6020A	376038
480-123762-20	DUPLICATE #2	Total/NA	Water	6020A	376038
MB 480-376038/1-A	Method Blank	Total/NA	Water	6020A	376038
LCS 480-376038/2-A	Lab Control Sample	Total/NA	Water	6020A	376038
480-123762-3 MS	D-2S	Total/NA	Water	6020A	376038
480-123762-3 MSD	D-2S	Total/NA	Water	6020A	376038

### Analysis Batch: 376493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-376038/2-A	Lab Control Sample	Total/NA	Water	6020A	376038

### Analysis Batch: 376496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	6020A	376142
MB 480-376142/1-A	Method Blank	Total/NA	Water	6020A	376142
LCS 480-376142/2-A	Lab Control Sample	Total/NA	Water	6020A	376142

### Analysis Batch: 376513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	6010C	376039
MB 480-376039/1-A	Method Blank	Total/NA	Water	6010C	376039
LCS 480-376039/2-A	Lab Control Sample	Total/NA	Water	6010C	376039

### Analysis Batch: 376515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	6010C	376035
480-123762-2	D-1D	Total/NA	Water	6010C	376035
480-123762-3	D-2S	Total/NA	Water	6010C	376035
480-123762-4	D-2D	Total/NA	Water	6010C	376035

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Metals (Continued)

### Analysis Batch: 376515 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-5	D-4S	Total/NA	Water	6010C	376035
480-123762-6	D-4D	Total/NA	Water	6010C	376035
480-123762-7	D-8	Total/NA	Water	6010C	376035
480-123762-8	D-9	Total/NA	Water	6010C	376035
480-123762-9	U-4S	Total/NA	Water	6010C	376035
480-123762-10	U-4D	Total/NA	Water	6010C	376035
480-123762-11	U-5S	Total/NA	Water	6010C	376035
480-123762-12	U-5D	Total/NA	Water	6010C	376035
480-123762-13	D-5S2	Total/NA	Water	6010C	376035
480-123762-14	D-5D	Total/NA	Water	6010C	376035
480-123762-15	D-3S	Total/NA	Water	6010C	376035
480-123762-16	D-3D	Total/NA	Water	6010C	376035
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	6010C	376035
480-123762-18	DUPLICATE #1	Total/NA	Water	6010C	376035
480-123762-19	FIELD BLANK #1	Total/NA	Water	6010C	376035
480-123762-20	DUPLICATE #2	Total/NA	Water	6010C	376035
MB 480-376035/1-A	Method Blank	Total/NA	Water	6010C	376035
LCS 480-376035/2-A	Lab Control Sample	Total/NA	Water	6010C	376035
480-123762-1 MS	D-1S	Total/NA	Water	6010C	376035
480-123762-1 MSD	D-1S	Total/NA	Water	6010C	376035

### Prep Batch: 377258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-4	D-2D	Total/NA	Water	3005A	
480-123762-5	D-4S	Total/NA	Water	3005A	
480-123762-6	D-4D	Total/NA	Water	3005A	
480-123762-7	D-8	Total/NA	Water	3005A	
480-123762-12	U-5D	Total/NA	Water	3005A	
MB 480-377258/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-377258/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-377258/24-A	Lab Control Sample Dup	Total/NA	Water	3005A	

### Analysis Batch: 377514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-4	D-2D	Total/NA	Water	6010C	377258
480-123762-5	D-4S	Total/NA	Water	6010C	377258
480-123762-6	D-4D	Total/NA	Water	6010C	377258
480-123762-7	D-8	Total/NA	Water	6010C	377258
480-123762-12	U-5D	Total/NA	Water	6010C	377258
MB 480-377258/1-A	Method Blank	Total/NA	Water	6010C	377258
LCS 480-377258/2-A	Lab Control Sample	Total/NA	Water	6010C	377258
LCSD 480-377258/24-A	Lab Control Sample Dup	Total/NA	Water	6010C	377258

## General Chemistry

### Analysis Batch: 375763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	SM 2540C	
480-123762-2	D-1D	Total/NA	Water	SM 2540C	
480-123762-3	D-2S	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## General Chemistry (Continued)

### Analysis Batch: 375763 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-4	D-2D	Total/NA	Water	SM 2540C	
MB 480-375763/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-375763/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-123762-4 DU	D-2D	Total/NA	Water	SM 2540C	

### Analysis Batch: 376021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	SM 4500 H+ B	
480-123762-2	D-1D	Total/NA	Water	SM 4500 H+ B	
480-123762-3	D-2S	Total/NA	Water	SM 4500 H+ B	
480-123762-4	D-2D	Total/NA	Water	SM 4500 H+ B	
480-123762-5	D-4S	Total/NA	Water	SM 4500 H+ B	
480-123762-6	D-4D	Total/NA	Water	SM 4500 H+ B	
480-123762-7	D-8	Total/NA	Water	SM 4500 H+ B	
480-123762-8	D-9	Total/NA	Water	SM 4500 H+ B	
480-123762-9	U-4S	Total/NA	Water	SM 4500 H+ B	
480-123762-10	U-4D	Total/NA	Water	SM 4500 H+ B	
480-123762-11	U-5S	Total/NA	Water	SM 4500 H+ B	
480-123762-12	U-5D	Total/NA	Water	SM 4500 H+ B	
480-123762-13	D-5S2	Total/NA	Water	SM 4500 H+ B	
480-123762-14	D-5D	Total/NA	Water	SM 4500 H+ B	
480-123762-15	D-3S	Total/NA	Water	SM 4500 H+ B	
480-123762-16	D-3D	Total/NA	Water	SM 4500 H+ B	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	SM 4500 H+ B	
480-123762-18	DUPLICATE #1	Total/NA	Water	SM 4500 H+ B	
480-123762-19	FIELD BLANK #1	Total/NA	Water	SM 4500 H+ B	
480-123762-20	DUPLICATE #2	Total/NA	Water	SM 4500 H+ B	
480-123762-21	FIELD BLANK #2	Total/NA	Water	SM 4500 H+ B	
LCS 480-376021/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 480-376021/23	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 376034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-5	D-4S	Total/NA	Water	SM 2540C	
480-123762-6	D-4D	Total/NA	Water	SM 2540C	
480-123762-7	D-8	Total/NA	Water	SM 2540C	
480-123762-9	U-4S	Total/NA	Water	SM 2540C	
480-123762-10	U-4D	Total/NA	Water	SM 2540C	
480-123762-11	U-5S	Total/NA	Water	SM 2540C	
480-123762-12	U-5D	Total/NA	Water	SM 2540C	
480-123762-13	D-5S2	Total/NA	Water	SM 2540C	
480-123762-14	D-5D	Total/NA	Water	SM 2540C	
480-123762-15	D-3S	Total/NA	Water	SM 2540C	
480-123762-16	D-3D	Total/NA	Water	SM 2540C	
480-123762-18	DUPLICATE #1	Total/NA	Water	SM 2540C	
480-123762-19	FIELD BLANK #1	Total/NA	Water	SM 2540C	
480-123762-20	DUPLICATE #2	Total/NA	Water	SM 2540C	
480-123762-21	FIELD BLANK #2	Total/NA	Water	SM 2540C	
MB 480-376034/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-376034/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-123762-5 DU	D-4S	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## General Chemistry (Continued)

### Analysis Batch: 376034 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-20 DU	DUPLICATE #2	Total/NA	Water	SM 2540C	

### Analysis Batch: 376061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	SM 2540C	
MB 480-376061/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-376061/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 376408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	300.0	
480-123762-2	D-1D	Total/NA	Water	300.0	
480-123762-3	D-2S	Total/NA	Water	300.0	
480-123762-4	D-2D	Total/NA	Water	300.0	
480-123762-5	D-4S	Total/NA	Water	300.0	
480-123762-6	D-4D	Total/NA	Water	300.0	
MB 480-376408/28	Method Blank	Total/NA	Water	300.0	
LCS 480-376408/27	Lab Control Sample	Total/NA	Water	300.0	
480-123762-6 MS	D-4D	Total/NA	Water	300.0	

### Analysis Batch: 376467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-8	D-9	Total/NA	Water	SM 2540C	
MB 480-376467/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-376467/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 376889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-7	D-8	Total/NA	Water	300.0	
480-123762-8	D-9	Total/NA	Water	300.0	
480-123762-9	U-4S	Total/NA	Water	300.0	
480-123762-10	U-4D	Total/NA	Water	300.0	
480-123762-11	U-5S	Total/NA	Water	300.0	
480-123762-12	U-5D	Total/NA	Water	300.0	
480-123762-13	D-5S2	Total/NA	Water	300.0	
480-123762-14	D-5D	Total/NA	Water	300.0	
480-123762-15	D-3S	Total/NA	Water	300.0	
480-123762-16	D-3D	Total/NA	Water	300.0	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	300.0	
480-123762-18	DUPLICATE #1	Total/NA	Water	300.0	
480-123762-19	FIELD BLANK #1	Total/NA	Water	300.0	
480-123762-20	DUPLICATE #2	Total/NA	Water	300.0	
480-123762-21	FIELD BLANK #2	Total/NA	Water	300.0	
MB 480-376889/4	Method Blank	Total/NA	Water	300.0	
LCS 480-376889/3	Lab Control Sample	Total/NA	Water	300.0	
480-123762-12 MS	U-5D	Total/NA	Water	300.0	
480-123762-12 MSD	U-5D	Total/NA	Water	300.0	
480-123762-21 MS	FIELD BLANK #2	Total/NA	Water	300.0	

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# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-1S**

**Date Collected: 09/06/17 08:00**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 15:42	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 11:44	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 20:10	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:31	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376408	09/12/17 22:51	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	375763	09/07/17 20:29	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:38	DSC	TAL BUF

**Client Sample ID: D-1D**

**Date Collected: 09/06/17 08:40**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:10	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:11	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 20:16	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:33	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376408	09/12/17 23:00	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	375763	09/07/17 20:29	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:40	DSC	TAL BUF

**Client Sample ID: D-2S**

**Date Collected: 09/06/17 09:00**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:13	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:15	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 20:39	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:35	BMB	TAL BUF

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# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Client Sample ID: D-2S

Date Collected: 09/06/17 09:00

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	376408	09/12/17 23:08	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	375763	09/07/17 20:29	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:43	DSC	TAL BUF

## Client Sample ID: D-2D

Date Collected: 09/06/17 09:20

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			377258	09/18/17 08:58	EMB	TAL BUF
Total/NA	Analysis	6010C		1	377514	09/18/17 15:44	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:17	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:18	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:06	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:37	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376408	09/12/17 23:16	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	375763	09/07/17 20:29	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:46	DSC	TAL BUF

## Client Sample ID: D-4S

Date Collected: 09/06/17 09:40

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			377258	09/18/17 08:58	EMB	TAL BUF
Total/NA	Analysis	6010C		1	377514	09/18/17 15:48	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:21	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:22	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:12	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:44	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376408	09/12/17 23:24	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:49	DSC	TAL BUF

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# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-4D**

**Lab Sample ID: 480-123762-6**

**Date Collected: 09/06/17 10:05**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			377258	09/18/17 08:58	EMB	TAL BUF
Total/NA	Analysis	6010C		1	377514	09/18/17 15:51	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:24	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:25	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:17	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:51	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376408	09/12/17 23:32	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:52	DSC	TAL BUF

**Client Sample ID: D-8**

**Lab Sample ID: 480-123762-7**

**Date Collected: 09/06/17 10:20**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			377258	09/18/17 08:58	EMB	TAL BUF
Total/NA	Analysis	6010C		1	377514	09/18/17 15:55	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:28	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:29	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:23	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:53	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 12:55	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:55	DSC	TAL BUF

**Client Sample ID: D-9**

**Lab Sample ID: 480-123762-8**

**Date Collected: 09/06/17 10:45**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:42	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:33	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-9**

**Lab Sample ID: 480-123762-8**

**Date Collected: 09/06/17 10:45**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	376328	09/11/17 21:28	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:55	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 13:03	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376467	09/12/17 21:38	CDC	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 14:57	DSC	TAL BUF

**Client Sample ID: U-4S**

**Lab Sample ID: 480-123762-9**

**Date Collected: 09/05/17 09:20**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:46	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:47	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:52	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:57	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 13:11	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:00	DSC	TAL BUF

**Client Sample ID: U-4D**

**Lab Sample ID: 480-123762-10**

**Date Collected: 09/05/17 09:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:49	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:50	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 21:57	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 15:58	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 13:19	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:03	DSC	TAL BUF

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: U-5S**

**Lab Sample ID: 480-123762-11**

**Date Collected: 09/05/17 10:20**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:53	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:54	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:03	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:00	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 13:28	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:09	DSC	TAL BUF

**Client Sample ID: U-5D**

**Lab Sample ID: 480-123762-12**

**Date Collected: 09/05/17 10:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			377258	09/18/17 08:58	EMB	TAL BUF
Total/NA	Analysis	6010C		1	377514	09/18/17 15:58	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 16:56	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 12:57	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:08	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:02	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 13:36	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:11	DSC	TAL BUF

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-123762-13**

**Date Collected: 09/05/17 11:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:00	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:01	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:13	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-123762-13**

**Date Collected: 09/05/17 11:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	376216	09/11/17 16:04	BMB	TAL BUF
Total/NA	Analysis	300.0		5	376889	09/14/17 14:16	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:14	DSC	TAL BUF

**Client Sample ID: D-5D**

**Lab Sample ID: 480-123762-14**

**Date Collected: 09/05/17 12:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:04	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:04	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:19	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:07	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 14:25	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:17	DSC	TAL BUF

**Client Sample ID: D-3S**

**Lab Sample ID: 480-123762-15**

**Date Collected: 09/05/17 12:35**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:07	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:08	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:24	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:09	BMB	TAL BUF
Total/NA	Analysis	300.0		5	376889	09/14/17 14:33	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:20	DSC	TAL BUF



# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: D-3D**

**Lab Sample ID: 480-123762-16**

**Date Collected: 09/05/17 12:55**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:11	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:11	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:30	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:15	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 14:41	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 15:23	DSC	TAL BUF

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-123762-17**

**Date Collected: 09/06/17 11:15**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:25	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:15	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:35	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:16	BMB	TAL BUF
Total/NA	Analysis	300.0		1	376889	09/14/17 14:49	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376061	09/11/17 08:10	EKB	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 13:36	DSC	TAL BUF

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-123762-18**

**Date Collected: 09/05/17 00:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:29	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:29	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 22:41	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:19	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 14:57	RJS	TAL BUF

TestAmerica Buffalo



# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 13:39	DSC	TAL BUF

## Client Sample ID: FIELD BLANK #1

Lab Sample ID: 480-123762-19

Date Collected: 09/05/17 11:00

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:32	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:32	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 23:04	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:20	BMB	TAL BUF
Total/NA	Analysis	300.0		1	376889	09/14/17 15:05	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 13:41	DSC	TAL BUF

## Client Sample ID: DUPLICATE #2

Lab Sample ID: 480-123762-20

Date Collected: 09/05/17 00:00

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376295	09/11/17 17:36	LMH	TAL BUF
Total/NA	Prep	3005A			376035	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376515	09/12/17 13:36	LMH	TAL BUF
Total/NA	Prep	3020A			376038	09/11/17 09:08	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376328	09/11/17 23:09	JRK	TAL BUF
Total/NA	Prep	7470A			376118	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:22	BMB	TAL BUF
Total/NA	Analysis	300.0		2	376889	09/14/17 15:18	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 13:44	DSC	TAL BUF

## Client Sample ID: FIELD BLANK #2

Lab Sample ID: 480-123762-21

Date Collected: 09/05/17 13:30

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			376039	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376299	09/11/17 20:23	LMH	TAL BUF
Total/NA	Prep	3005A			376039	09/11/17 09:30	EMB	TAL BUF
Total/NA	Analysis	6010C		1	376513	09/12/17 09:11	LMH	TAL BUF

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-123762-21**

**Date Collected: 09/05/17 13:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3020A			376142	09/12/17 08:14	EMB	TAL BUF
Total/NA	Analysis	6020A		1	376496	09/12/17 16:51	JRK	TAL BUF
Total/NA	Prep	7470A			376121	09/11/17 12:00	MVZ	TAL BUF
Total/NA	Analysis	7470A		1	376216	09/11/17 16:28	BMB	TAL BUF
Total/NA	Analysis	300.0		1	376889	09/14/17 15:26	RJS	TAL BUF
Total/NA	Analysis	SM 2540C		1	376034	09/11/17 05:44	BEV	TAL BUF
Total/NA	Analysis	SM 4500 H+ B		1	376021	09/10/17 13:47	DSC	TAL BUF

#### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

## Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
6010C	3005A	Water	Lithium

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	pH
SM 4500 H+ B		Water	Temperature

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 H+ B	pH	SM	TAL BUF

### Protocol References:

- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SM = "Standard Methods For The Examination Of Water And Wastewater",
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

- TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-123762-1	D-1S	Water	09/06/17 08:00	09/07/17 10:00
480-123762-2	D-1D	Water	09/06/17 08:40	09/07/17 10:00
480-123762-3	D-2S	Water	09/06/17 09:00	09/07/17 10:00
480-123762-4	D-2D	Water	09/06/17 09:20	09/07/17 10:00
480-123762-5	D-4S	Water	09/06/17 09:40	09/07/17 10:00
480-123762-6	D-4D	Water	09/06/17 10:05	09/07/17 10:00
480-123762-7	D-8	Water	09/06/17 10:20	09/07/17 10:00
480-123762-8	D-9	Water	09/06/17 10:45	09/07/17 10:00
480-123762-9	U-4S	Water	09/05/17 09:20	09/07/17 10:00
480-123762-10	U-4D	Water	09/05/17 09:30	09/07/17 10:00
480-123762-11	U-5S	Water	09/05/17 10:20	09/07/17 10:00
480-123762-12	U-5D	Water	09/05/17 10:30	09/07/17 10:00
480-123762-13	D-5S2	Water	09/05/17 11:30	09/07/17 10:00
480-123762-14	D-5D	Water	09/05/17 12:00	09/07/17 10:00
480-123762-15	D-3S	Water	09/05/17 12:35	09/07/17 10:00
480-123762-16	D-3D	Water	09/05/17 12:55	09/07/17 10:00
480-123762-17	EQUIPMENT BLANK	Water	09/06/17 11:15	09/07/17 10:00
480-123762-18	DUPLICATE #1	Water	09/05/17 00:00	09/07/17 10:00
480-123762-19	FIELD BLANK #1	Water	09/05/17 11:00	09/07/17 10:00
480-123762-20	DUPLICATE #2	Water	09/05/17 00:00	09/07/17 10:00
480-123762-21	FIELD BLANK #2	Water	09/05/17 13:30	09/07/17 10:00

<b>Client Contact</b>	<b>Project Manager: Ryan Van Datta</b>	<b>Site Contact: Nathaniel Beineman</b>	<b>Date:</b> 9/6/17	<b>COC No.:</b> 1 of 2 COCs
SKB Environmental	<b>Tel/Fax:</b>	<b>Lab Contact:</b>	<b>Carrier:</b>	
13425 Courthouse Blvd	<b>Analysis Turnaround Time</b>			
Rosemount, MN 55068	<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS			
(651) 438-1500 Phone	TAT if different from Below			
(651) 438-1549 FAX	<input type="checkbox"/> 2 weeks			
Project Name: RSMNT 2017 CCR GW Event 8	<input type="checkbox"/> 1 week			
Site:	<input type="checkbox"/> 2 days			
P O # 3063-17-01128	<input type="checkbox"/> 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals) + Mercury	pH	Sulfate	Chloride	Fluoride	TDS	Sample Specific Notes:
D-15	9/6/17	8:00	Grab	Water	7	X	X	X	X	X	X	X	X	
D-1D		8:40	Grab	Water	7	X	X	X	X	X	X	X	X	
D-25		9:00	Grab	Water	7	X	X	X	X	X	X	X	X	
D-2D		9:20	Grab	Water	7	X	X	X	X	X	X	X	X	
D-45		9:40	Grab	Water	7	X	X	X	X	X	X	X	X	
D-4D		10:05	Grab	Water	7	X	X	X	X	X	X	X	X	
D-8		10:20	Grab	Water	7	X	X	X	X	X	X	X	X	
D-9		10:45	Grab	Water	7	X	X	X	X	X	X	X	X	
Equipment Blank		11:15	Blank	Water	7	X	X	X	X	X	X	X	X	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

40, 34

Therm ID No.: 3

<b>Custody Seal No.:</b>	<b>Received by:</b> SA	<b>Date/Time:</b> 9/6/17 15:00
Company: CES	Company: TA	Company: TA
<b>Relinquished by:</b> SA	<b>Received by:</b> SA	<b>Date/Time:</b> 9-16-17
Company: SA	Company: TA	Company: TA
<b>Relinquished by:</b>	<b>Received by:</b> SA	<b>Date/Time:</b> 9/17/17
Company:	Company: TA	Company: TA





Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.  
COC No: 1 of 2 COCs

<b>Client Contact</b> SKB Environmental 13425 Courthouse Blvd Rosemount, MN 55068 (651) 438-1500 Phone (651) 438-1549 FAX Project Name: RSMNT 2017 CCR GW Event 8 Site: P O # 3063-17-01128		<b>Regulatory Program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other:		<b>Project Manager:</b> Ryan Van Dette Tel/Fax:		<b>Site Contact:</b> Nathaniel Beineman Date: 9/15/17 Carrier:								
<b>Analysis Turnaround Time</b> <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		<b>Lab Contact:</b> Metals (total) + Mercury Perform MS / MSD (Y / N) Filtered Sample (Y / N)		Radium 226 & 228 combined pH Sulfate Chloride Fluoride TDS		Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.: Sample Specific Notes:								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Metals (total) + Mercury (Y/N)	Perform MS / MSD (Y/N)	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS
V-45	9/17	9:20	Grab	Water	7		X	X	X	X	X	X	X	X
V-4D		9:30	Grab	Water	7		X	X	X	X	X	X	X	X
V-55		10:20	Grab	Water	7		X	X	X	X	X	X	X	X
Duplicate #1		-	Grab	Water	7		X	X	X	X	X	X	X	X
V-5D		11:30	Grab	Water	7		X	X	X	X	X	X	X	X
Field Blank #1		11:00	Grab	Water	7		X	X	X	X	X	X	X	X
D-55Z		11:30	Grab	Water	7		X	X	X	X	X	X	X	X
D-5D		12:00	Grab	Water	7		X	X	X	X	X	X	X	X
D-35		12:55	Grab	Water	7		X	X	X	X	X	X	X	X
D-3D		12:55	Grab	Water	7		X	X	X	X	X	X	X	X
Duplicate #2		-	Grab	Water	7		X	X	X	X	X	X	X	X
Field Blank #2		13:30	Grab	Water	7		X	X	X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other  
**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

**\*Metals (not field filtered) - Boron, Calcium, Antimony, Arsenic, Barium, beryllium, cadmium, chromium, cobalt, Fluoride, Lead, Lithium, Molybdenum, Selenium, Thallium**  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Custody Seal No.:** \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Date/Time: 9/17 15:00  
 Date/Time: 9/17 16:00  
 Date/Time: 9/17 17:00  
 Company: T.A.  
 Company: T.A.  
 Company: T.A.  
 Received by: [Signature]  
 Received in Laboratory by: [Signature]  
 Received by: [Signature]  
 Received in Laboratory by: [Signature]  
 Date/Time: 9/17 15:00  
 Date/Time: 9/17 16:00  
 Date/Time: 9/17 17:00  
 Company: T.A.  
 Company: T.A.  
 Company: T.A.  
 Received by: [Signature]  
 Received in Laboratory by: [Signature]  
 Received by: [Signature]  
 Received in Laboratory by: [Signature]



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-123762-1

SDG Number:

**Login Number: 123762**

**List Number: 1**

**Creator: Conway, Curtis R**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	





# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-123762-2

Client Project/Site: SKB Rosemount - CCR Groundwater

Sampling Event: CCR Groundwater

For:

Waste Connections, Inc.

13425 Courthouse Blvd

Rosemount, Minnesota 55068

Attn: Nathaniel Beinemann



Authorized for release by:

10/5/2017 11:28:19 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Ryan VanDette, Project Manager II

(716)504-9830

[ryan.vandette@testamericainc.com](mailto:ryan.vandette@testamericainc.com)

### LINKS

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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Job ID: 480-123762-2**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-123762-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/7/2017 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 3.4° C, 4.0° C, 4.1° C and 4.4° C.

#### RAD

Method(s) PrecSep\_0: Radium 228 Prep BAtch: 160-326592: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision: D-1S (480-123762-1), D-1D (480-123762-2), D-2S (480-123762-3), D-2D (480-123762-4), D-4S (480-123762-5), D-4D (480-123762-6), D-8 (480-123762-7), D-9 (480-123762-8), U-4S (480-123762-9), U-4D (480-123762-10), U-5S (480-123762-11), U-5D (480-123762-12), D-5S2 (480-123762-13), D-5D (480-123762-14), D-3S (480-123762-15), D-3D (480-123762-16), EQUIPMENT BLANK (480-123762-17), DUPLICATE #1 (480-123762-18), FIELD BLANK #1 (480-123762-19) and DUPLICATE #2 (480-123762-20).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-326586: Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision: D-1S (480-123762-1), D-1D (480-123762-2), D-2S (480-123762-3), D-2D (480-123762-4), D-4S (480-123762-5), D-4D (480-123762-6), D-8 (480-123762-7), D-9 (480-123762-8), U-4S (480-123762-9), U-4D (480-123762-10), U-5S (480-123762-11), U-5D (480-123762-12), D-5S2 (480-123762-13), D-5D (480-123762-14), D-3S (480-123762-15), D-3D (480-123762-16), EQUIPMENT BLANK (480-123762-17), DUPLICATE #1 (480-123762-18), FIELD BLANK #1 (480-123762-19) and DUPLICATE #2 (480-123762-20).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-1S**

**Lab Sample ID: 480-123762-1**

No Detections.

**Client Sample ID: D-1D**

**Lab Sample ID: 480-123762-2**

No Detections.

**Client Sample ID: D-2S**

**Lab Sample ID: 480-123762-3**

No Detections.

**Client Sample ID: D-2D**

**Lab Sample ID: 480-123762-4**

No Detections.

**Client Sample ID: D-4S**

**Lab Sample ID: 480-123762-5**

No Detections.

**Client Sample ID: D-4D**

**Lab Sample ID: 480-123762-6**

No Detections.

**Client Sample ID: D-8**

**Lab Sample ID: 480-123762-7**

No Detections.

**Client Sample ID: D-9**

**Lab Sample ID: 480-123762-8**

No Detections.

**Client Sample ID: U-4S**

**Lab Sample ID: 480-123762-9**

No Detections.

**Client Sample ID: U-4D**

**Lab Sample ID: 480-123762-10**

No Detections.

**Client Sample ID: U-5S**

**Lab Sample ID: 480-123762-11**

No Detections.

**Client Sample ID: U-5D**

**Lab Sample ID: 480-123762-12**

No Detections.

**Client Sample ID: D-5S2**

**Lab Sample ID: 480-123762-13**

No Detections.

**Client Sample ID: D-5D**

**Lab Sample ID: 480-123762-14**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Detection Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-3S**

**Lab Sample ID: 480-123762-15**

No Detections.

**Client Sample ID: D-3D**

**Lab Sample ID: 480-123762-16**

No Detections.

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-123762-17**

No Detections.

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-123762-18**

No Detections.

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-123762-19**

No Detections.

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-123762-20**

No Detections.

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-123762-21**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-1S**  
**Date Collected: 09/06/17 08:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-1**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0733		0.0501	0.0505	1.00	0.0641	pCi/L	09/11/17 09:39	10/03/17 07:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:39	10/03/17 07:35	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.416		0.231	0.234	1.00	0.345	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	77.4		40 - 110					09/11/17 10:12	09/15/17 09:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-1D**  
**Date Collected: 09/06/17 08:40**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-2**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.109		0.0609	0.0617	1.00	0.0759	pCi/L	09/11/17 09:39	10/03/17 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					09/11/17 09:39	10/03/17 07:36	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.718		0.262	0.270	1.00	0.345	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	74.0		40 - 110					09/11/17 10:12	09/15/17 09:41	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-2S**  
**Date Collected: 09/06/17 09:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-3**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0716	U	0.0554	0.0557	1.00	0.0787	pCi/L	09/11/17 09:39	10/03/17 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					09/11/17 09:39	10/03/17 07:36	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.503		0.242	0.246	1.00	0.345	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	74.0		40 - 110					09/11/17 10:12	09/15/17 09:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-2D**  
**Date Collected: 09/06/17 09:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-4**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0252	U	0.0411	0.0411	1.00	0.0721	pCi/L	09/11/17 09:39	10/03/17 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					09/11/17 09:39	10/03/17 07:36	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.546		0.247	0.252	1.00	0.351	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	74.4		40 - 110					09/11/17 10:12	09/15/17 09:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-4S**  
**Date Collected: 09/06/17 09:40**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-5**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0303	U	0.0423	0.0424	1.00	0.0716	pCi/L	09/11/17 09:39	10/03/17 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					09/11/17 09:39	10/03/17 07:36	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.710		0.268	0.275	1.00	0.362	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	72.9		40 - 110					09/11/17 10:12	09/15/17 09:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-4D**  
**Date Collected: 09/06/17 10:05**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-6**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0734	U	0.0558	0.0562	1.00	0.0787	pCi/L	09/11/17 09:39	10/03/17 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/11/17 09:39	10/03/17 07:36	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.677		0.249	0.257	1.00	0.330	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	72.5		40 - 110					09/11/17 10:12	09/15/17 09:41	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-8**

**Date Collected: 09/06/17 10:20**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-7**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.123		0.0638	0.0648	1.00	0.0713	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.830		0.285	0.295	1.00	0.368	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	68.0		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-9**

**Date Collected: 09/06/17 10:45**

**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-8**

**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0211	U	0.0406	0.0406	1.00	0.0737	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.727		0.288	0.295	1.00	0.396	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	69.9		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: U-4S**  
**Date Collected: 09/05/17 09:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-9**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0762		0.0473	0.0478	1.00	0.0526	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.681		0.259	0.267	1.00	0.352	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	73.3		40 - 110					09/11/17 10:12	09/15/17 09:42	1

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# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: U-4D**  
**Date Collected: 09/05/17 09:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-10**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0157	U	0.0328	0.0329	1.00	0.0616	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.661		0.254	0.261	1.00	0.343	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	74.4		40 - 110					09/11/17 10:12	09/15/17 09:42	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: U-5S**  
**Date Collected: 09/05/17 10:20**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-11**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.144		0.0644	0.0657	1.00	0.0627	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.979		0.272	0.287	1.00	0.328	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	76.3		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: U-5D**  
**Date Collected: 09/05/17 10:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-12**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0341	U	0.0392	0.0393	1.00	0.0624	pCi/L	09/11/17 09:39	10/03/17 07:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:39	10/03/17 07:39	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.30		0.317	0.339	1.00	0.378	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	71.8		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-5S2**  
**Date Collected: 09/05/17 11:30**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-13**  
**Matrix: Water**

## Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.102		0.0546	0.0554	1.00	0.0569	pCi/L	09/11/17 09:39	10/03/17 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					09/11/17 09:39	10/03/17 07:40	1

## Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.768		0.281	0.290	1.00	0.383	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	73.6		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-5D**  
**Date Collected: 09/05/17 12:00**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-14**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0634		0.0488	0.0491	1.00	0.0631	pCi/L	09/11/17 09:39	10/03/17 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:39	10/03/17 07:40	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.629		0.309	0.314	1.00	0.462	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	73.3		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-3S**  
**Date Collected: 09/05/17 12:35**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-15**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0767	U	0.0647	0.0651	1.00	0.0966	pCi/L	09/11/17 09:39	10/03/17 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					09/11/17 09:39	10/03/17 07:40	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.472		0.285	0.289	1.00	0.436	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	71.8		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: D-3D**  
**Date Collected: 09/05/17 12:55**  
**Date Received: 09/07/17 10:00**

**Lab Sample ID: 480-123762-16**  
**Matrix: Water**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0690	0.0703	1.00	0.0671	pCi/L	09/11/17 09:39	10/03/17 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/11/17 09:39	10/03/17 07:40	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.994		0.292	0.306	1.00	0.369	pCi/L	09/11/17 10:12	09/15/17 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/11/17 10:12	09/15/17 09:42	1
Y Carrier	73.3		40 - 110					09/11/17 10:12	09/15/17 09:42	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: EQUIPMENT BLANK**

**Lab Sample ID: 480-123762-17**

Date Collected: 09/06/17 11:15

Matrix: Water

Date Received: 09/07/17 10:00

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0594	U	0.0497	0.0500	1.00	0.0675	pCi/L	09/11/17 09:39	10/03/17 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					09/11/17 09:39	10/03/17 07:40	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.737		0.282	0.290	1.00	0.380	pCi/L	09/11/17 10:12	09/15/17 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					09/11/17 10:12	09/15/17 09:43	1
Y Carrier	70.7		40 - 110					09/11/17 10:12	09/15/17 09:43	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: DUPLICATE #1**

**Lab Sample ID: 480-123762-18**

Date Collected: 09/05/17 00:00

Matrix: Water

Date Received: 09/07/17 10:00

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.125		0.0685	0.0694	1.00	0.0808	pCi/L	09/11/17 09:39	10/03/17 07:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					09/11/17 09:39	10/03/17 07:42	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.481		0.229	0.234	1.00	0.328	pCi/L	09/11/17 10:12	09/15/17 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					09/11/17 10:12	09/15/17 09:43	1
Y Carrier	77.0		40 - 110					09/11/17 10:12	09/15/17 09:43	1



# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: FIELD BLANK #1**

**Lab Sample ID: 480-123762-19**

**Date Collected: 09/05/17 11:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0449	U	0.0499	0.0501	1.00	0.0794	pCi/L	09/11/17 09:39	10/03/17 07:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					09/11/17 09:39	10/03/17 07:42	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.27		0.332	0.352	1.00	0.411	pCi/L	09/11/17 10:12	09/15/17 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					09/11/17 10:12	09/15/17 09:43	1
Y Carrier	69.9		40 - 110					09/11/17 10:12	09/15/17 09:43	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: DUPLICATE #2**

**Lab Sample ID: 480-123762-20**

**Date Collected: 09/05/17 00:00**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128		0.0685	0.0695	1.00	0.0791	pCi/L	09/11/17 09:39	10/03/17 07:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/11/17 09:39	10/03/17 07:43	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.203	U	0.254	0.254	1.00	0.420	pCi/L	09/11/17 10:12	09/15/17 09:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/11/17 10:12	09/15/17 09:51	1
Y Carrier	71.4		40 - 110					09/11/17 10:12	09/15/17 09:51	1

# Client Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

**Client Sample ID: FIELD BLANK #2**

**Lab Sample ID: 480-123762-21**

**Date Collected: 09/05/17 13:30**

**Matrix: Water**

**Date Received: 09/07/17 10:00**

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00327	U	0.0273	0.0273	1.00	0.0618	pCi/L	09/11/17 08:19	10/03/17 19:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/11/17 08:19	10/03/17 19:27	1

**Method: 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.220	U	0.234	0.235	1.00	0.382	pCi/L	09/11/17 09:07	09/15/17 13:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/11/17 09:07	09/15/17 13:42	1
Y Carrier	81.1		40 - 110					09/11/17 09:07	09/15/17 13:42	1

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba (40-110)	Percent Yield (Acceptance Limits)			
480-123762-1	D-1S	101				
480-123762-2	D-1D	95.9				
480-123762-3	D-2S	95.3				
480-123762-4	D-2D	97.6				
480-123762-5	D-4S	98.2				
480-123762-6	D-4D	100				
480-123762-7	D-8	95.0				
480-123762-8	D-9	92.3				
480-123762-9	U-4S	101				
480-123762-10	U-4D	96.8				
480-123762-11	U-5S	101				
480-123762-12	U-5D	101				
480-123762-13	D-5S2	98.8				
480-123762-14	D-5D	101				
480-123762-15	D-3S	96.8				
480-123762-16	D-3D	100				
480-123762-17	EQUIPMENT BLANK	92.3				
480-123762-18	DUPLICATE #1	98.5				
480-123762-19	FIELD BLANK #1	99.1				
480-123762-20	DUPLICATE #2	102				
480-123762-21	FIELD BLANK #2	104				
LCS 160-326485/2-A	Lab Control Sample	94.4				
LCS 160-326586/2-A	Lab Control Sample	104				
LCSD 160-326586/3-A	Lab Control Sample Dup	99.7				
MB 160-326485/1-A	Method Blank	101				
MB 160-326586/1-A	Method Blank	102				

**Tracer/Carrier Legend**

Ba = Ba Carrier

## Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)	Percent Yield (Acceptance Limits)			
480-123762-1	D-1S	101	77.4				
480-123762-2	D-1D	95.9	74.0				
480-123762-3	D-2S	95.3	74.0				
480-123762-4	D-2D	97.6	74.4				
480-123762-5	D-4S	98.2	72.9				
480-123762-6	D-4D	100	72.5				
480-123762-7	D-8	95.0	68.0				
480-123762-8	D-9	92.3	69.9				
480-123762-9	U-4S	101	73.3				
480-123762-10	U-4D	96.8	74.4				
480-123762-11	U-5S	101	76.3				
480-123762-12	U-5D	101	71.8				
480-123762-13	D-5S2	98.8	73.6				

TestAmerica Buffalo

# Tracer/Carrier Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
480-123762-14	D-5D	101	73.3
480-123762-15	D-3S	96.8	71.8
480-123762-16	D-3D	100	73.3
480-123762-17	EQUIPMENT BLANK	92.3	70.7
480-123762-18	DUPLICATE #1	98.5	77.0
480-123762-19	FIELD BLANK #1	99.1	69.9
480-123762-20	DUPLICATE #2	102	71.4
480-123762-21	FIELD BLANK #2	104	81.1
LCS 160-326580/2-A	Lab Control Sample	94.4	90.1
LCS 160-326592/2-A	Lab Control Sample	104	74.4
LCSD 160-326592/3-A	Lab Control Sample Dup	99.7	78.1
MB 160-326580/1-A	Method Blank	101	81.1
MB 160-326592/1-A	Method Blank	102	71.8

### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

# QC Sample Results

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-326485/1-A**  
**Matrix: Water**  
**Analysis Batch: 330104**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 326485**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01786	U	0.0183	0.0183	1.00	0.0622	pCi/L	09/11/17 08:19	10/03/17 19:27	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 08:19	10/03/17 19:27	1

**Lab Sample ID: LCS 160-326485/2-A**  
**Matrix: Water**  
**Analysis Batch: 330104**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 326485**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	9.60	9.721		1.00	1.00	0.0590	pCi/L	101	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	94.4		40 - 110						

**Lab Sample ID: MB 160-326586/1-A**  
**Matrix: Water**  
**Analysis Batch: 330105**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 326586**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.008046	U	0.0379	0.0379	1.00	0.0754	pCi/L	09/11/17 09:39	10/03/17 07:35	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/11/17 09:39	10/03/17 07:35	1

**Lab Sample ID: LCS 160-326586/2-A**  
**Matrix: Water**  
**Analysis Batch: 330105**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 326586**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	9.60	8.591		0.888	1.00	0.0666	pCi/L	89	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	104		40 - 110						

**Lab Sample ID: LCSD 160-326586/3-A**  
**Matrix: Water**  
**Analysis Batch: 330105**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 326586**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	9.60	8.658		0.900	1.00	0.0732	pCi/L	90	68 - 137	0.04	1

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Method: 903.0 - Radium-226 (GFPC) (Continued)

**Lab Sample ID: LCSD 160-326586/3-A**  
**Matrix: Water**  
**Analysis Batch: 330105**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 326586**

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	99.7		40 - 110

## Method: 904.0 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-326580/1-A**  
**Matrix: Water**  
**Analysis Batch: 327361**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 326580**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4389		0.245	0.248	1.00	0.366	pCi/L	09/11/17 09:07	09/15/17 13:42	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/11/17 09:07	09/15/17 13:42	1
Y Carrier	81.1		40 - 110					09/11/17 09:07	09/15/17 13:42	1

**Lab Sample ID: LCS 160-326580/2-A**  
**Matrix: Water**  
**Analysis Batch: 327361**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 326580**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.9	13.77		1.48	1.00	0.329	pCi/L	107	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	94.4		40 - 110						
Y Carrier	90.1		40 - 110						

**Lab Sample ID: MB 160-326592/1-A**  
**Matrix: Water**  
**Analysis Batch: 327366**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 326592**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5389		0.247	0.252	1.00	0.354	pCi/L	09/11/17 10:12	09/15/17 09:41	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/11/17 10:12	09/15/17 09:41	1
Y Carrier	71.8		40 - 110					09/11/17 10:12	09/15/17 09:41	1

**Lab Sample ID: LCS 160-326592/2-A**  
**Matrix: Water**  
**Analysis Batch: 327366**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 326592**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.9	16.19		1.71	1.00	0.311	pCi/L	125	56 - 140

TestAmerica Buffalo

# QC Sample Results

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

Carrier	LCS		Limits
	%Yield	Qualifier	
Ba Carrier	104		40 - 110
Y Carrier	74.4		40 - 110

Lab Sample ID: LCSD 160-326592/3-A  
 Matrix: Water  
 Analysis Batch: 327366

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 326592

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.		RER
									Limits	RER	Limit
Radium-228	12.9	15.64		1.65	1.00	0.346	pCi/L	121	56 - 140	0.16	1

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	99.7		40 - 110
Y Carrier	78.1		40 - 110

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
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- 11
- 12
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- 14
- 15



# QC Association Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Rad

### Prep Batch: 326485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	PrecSep-21	
MB 160-326485/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-326485/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 326580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-21	FIELD BLANK #2	Total/NA	Water	PrecSep_0	
MB 160-326580/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-326580/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

### Prep Batch: 326586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	PrecSep-21	
480-123762-2	D-1D	Total/NA	Water	PrecSep-21	
480-123762-3	D-2S	Total/NA	Water	PrecSep-21	
480-123762-4	D-2D	Total/NA	Water	PrecSep-21	
480-123762-5	D-4S	Total/NA	Water	PrecSep-21	
480-123762-6	D-4D	Total/NA	Water	PrecSep-21	
480-123762-7	D-8	Total/NA	Water	PrecSep-21	
480-123762-8	D-9	Total/NA	Water	PrecSep-21	
480-123762-9	U-4S	Total/NA	Water	PrecSep-21	
480-123762-10	U-4D	Total/NA	Water	PrecSep-21	
480-123762-11	U-5S	Total/NA	Water	PrecSep-21	
480-123762-12	U-5D	Total/NA	Water	PrecSep-21	
480-123762-13	D-5S2	Total/NA	Water	PrecSep-21	
480-123762-14	D-5D	Total/NA	Water	PrecSep-21	
480-123762-15	D-3S	Total/NA	Water	PrecSep-21	
480-123762-16	D-3D	Total/NA	Water	PrecSep-21	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	PrecSep-21	
480-123762-18	DUPLICATE #1	Total/NA	Water	PrecSep-21	
480-123762-19	FIELD BLANK #1	Total/NA	Water	PrecSep-21	
480-123762-20	DUPLICATE #2	Total/NA	Water	PrecSep-21	
MB 160-326586/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-326586/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-326586/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 326592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-1	D-1S	Total/NA	Water	PrecSep_0	
480-123762-2	D-1D	Total/NA	Water	PrecSep_0	
480-123762-3	D-2S	Total/NA	Water	PrecSep_0	
480-123762-4	D-2D	Total/NA	Water	PrecSep_0	
480-123762-5	D-4S	Total/NA	Water	PrecSep_0	
480-123762-6	D-4D	Total/NA	Water	PrecSep_0	
480-123762-7	D-8	Total/NA	Water	PrecSep_0	
480-123762-8	D-9	Total/NA	Water	PrecSep_0	
480-123762-9	U-4S	Total/NA	Water	PrecSep_0	
480-123762-10	U-4D	Total/NA	Water	PrecSep_0	
480-123762-11	U-5S	Total/NA	Water	PrecSep_0	
480-123762-12	U-5D	Total/NA	Water	PrecSep_0	
480-123762-13	D-5S2	Total/NA	Water	PrecSep_0	

TestAmerica Buffalo

# QC Association Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Rad (Continued)

### Prep Batch: 326592 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-123762-14	D-5D	Total/NA	Water	PrecSep_0	
480-123762-15	D-3S	Total/NA	Water	PrecSep_0	
480-123762-16	D-3D	Total/NA	Water	PrecSep_0	
480-123762-17	EQUIPMENT BLANK	Total/NA	Water	PrecSep_0	
480-123762-18	DUPLICATE #1	Total/NA	Water	PrecSep_0	
480-123762-19	FIELD BLANK #1	Total/NA	Water	PrecSep_0	
480-123762-20	DUPLICATE #2	Total/NA	Water	PrecSep_0	
MB 160-326592/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-326592/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-326592/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Client Sample ID: D-1S

Date Collected: 09/06/17 08:00

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:35	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-1D

Date Collected: 09/06/17 08:40

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:36	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-2S

Date Collected: 09/06/17 09:00

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:36	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-2D

Date Collected: 09/06/17 09:20

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:36	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-4S

Date Collected: 09/06/17 09:40

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:36	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Client Sample ID: D-4S

Date Collected: 09/06/17 09:40

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-4D

Date Collected: 09/06/17 10:05

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330105	10/03/17 07:36	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:41	ALD	TAL SL

## Client Sample ID: D-8

Date Collected: 09/06/17 10:20

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: D-9

Date Collected: 09/06/17 10:45

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: U-4S

Date Collected: 09/05/17 09:20

Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Client Sample ID: U-4D

Lab Sample ID: 480-123762-10

Date Collected: 09/05/17 09:30

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: U-5S

Lab Sample ID: 480-123762-11

Date Collected: 09/05/17 10:20

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: U-5D

Lab Sample ID: 480-123762-12

Date Collected: 09/05/17 10:30

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:39	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: D-5S2

Lab Sample ID: 480-123762-13

Date Collected: 09/05/17 11:30

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:40	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: D-5D

Lab Sample ID: 480-123762-14

Date Collected: 09/05/17 12:00

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:40	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Client Sample ID: D-5D

Date Collected: 09/05/17 12:00  
Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: D-3S

Date Collected: 09/05/17 12:35  
Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:40	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: D-3D

Date Collected: 09/05/17 12:55  
Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:40	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:42	ALD	TAL SL

## Client Sample ID: EQUIPMENT BLANK

Date Collected: 09/06/17 11:15  
Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 07:40	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:43	ALD	TAL SL

## Client Sample ID: DUPLICATE #1

Date Collected: 09/05/17 00:00  
Date Received: 09/07/17 10:00

## Lab Sample ID: 480-123762-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330103	10/03/17 07:42	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:43	ALD	TAL SL

TestAmerica Buffalo

# Lab Chronicle

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Client Sample ID: FIELD BLANK #1

Lab Sample ID: 480-123762-19

Date Collected: 09/05/17 11:00

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330103	10/03/17 07:42	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327366	09/15/17 09:43	ALD	TAL SL

## Client Sample ID: DUPLICATE #2

Lab Sample ID: 480-123762-20

Date Collected: 09/05/17 00:00

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326586	09/11/17 09:39	LDE	TAL SL
Total/NA	Analysis	903.0		1	330103	10/03/17 07:43	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326592	09/11/17 10:12	LDE	TAL SL
Total/NA	Analysis	904.0		1	327362	09/15/17 09:51	ALD	TAL SL

## Client Sample ID: FIELD BLANK #2

Lab Sample ID: 480-123762-21

Date Collected: 09/05/17 13:30

Matrix: Water

Date Received: 09/07/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			326485	09/11/17 08:19	BME	TAL SL
Total/NA	Analysis	903.0		1	330104	10/03/17 19:27	ALD	TAL SL
Total/NA	Prep	PrecSep_0			326580	09/11/17 09:07	LDE	TAL SL
Total/NA	Analysis	904.0		1	327361	09/15/17 13:42	ALD	TAL SL

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Accreditation/Certification Summary

Client: Waste Connections, Inc.  
 Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

## Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Minnesota	NELAP	5	036-999-337	12-31-17

## Laboratory: TestAmerica St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



# Sample Summary

Client: Waste Connections, Inc.  
Project/Site: SKB Rosemount - CCR Groundwater

TestAmerica Job ID: 480-123762-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-123762-1	D-1S	Water	09/06/17 08:00	09/07/17 10:00
480-123762-2	D-1D	Water	09/06/17 08:40	09/07/17 10:00
480-123762-3	D-2S	Water	09/06/17 09:00	09/07/17 10:00
480-123762-4	D-2D	Water	09/06/17 09:20	09/07/17 10:00
480-123762-5	D-4S	Water	09/06/17 09:40	09/07/17 10:00
480-123762-6	D-4D	Water	09/06/17 10:05	09/07/17 10:00
480-123762-7	D-8	Water	09/06/17 10:20	09/07/17 10:00
480-123762-8	D-9	Water	09/06/17 10:45	09/07/17 10:00
480-123762-9	U-4S	Water	09/05/17 09:20	09/07/17 10:00
480-123762-10	U-4D	Water	09/05/17 09:30	09/07/17 10:00
480-123762-11	U-5S	Water	09/05/17 10:20	09/07/17 10:00
480-123762-12	U-5D	Water	09/05/17 10:30	09/07/17 10:00
480-123762-13	D-5S2	Water	09/05/17 11:30	09/07/17 10:00
480-123762-14	D-5D	Water	09/05/17 12:00	09/07/17 10:00
480-123762-15	D-3S	Water	09/05/17 12:35	09/07/17 10:00
480-123762-16	D-3D	Water	09/05/17 12:55	09/07/17 10:00
480-123762-17	EQUIPMENT BLANK	Water	09/06/17 11:15	09/07/17 10:00
480-123762-18	DUPLICATE #1	Water	09/05/17 00:00	09/07/17 10:00
480-123762-19	FIELD BLANK #1	Water	09/05/17 11:00	09/07/17 10:00
480-123762-20	DUPLICATE #2	Water	09/05/17 00:00	09/07/17 10:00
480-123762-21	FIELD BLANK #2	Water	09/05/17 13:30	09/07/17 10:00

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 8  
Site:  
PO # 3063-17-01128

**Project Manager: Ryan Van Datta**  
Tel/Fax:

**Analysis Turnaround Time**  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact: Nathaniel Beineman** Date: 9/6/17  
**Lab Contact:** Carrier:

**Sampler:**  
**For Lab Use Only:**  
Walk-in Client:   
Lab Sampling:   
Job / SDG No:   
480-123762 COC



Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Metals (totals) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS
D-15	9/6/17	8:00	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-10		8:40	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-25		9:00	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-20		9:20	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-45		9:40	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-40		10:05	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-8		10:20	Grab	Water	7	X	X	X	X	X	X	X	X	X
D-9		10:45	Grab	Water	7	X	X	X	X	X	X	X	X	X
Equipment Blank		11:15	Blank	Water	7	X	X	X	X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Cooler Temp. (°C): Obs'd: 40, 34 Therm ID No.: 3

**Custody Seal No.:**  
Company: LES Date/Time: 9/6/17 15:00  
Company: TA Date/Time: 9-5-17  
Company: TA Date/Time: 9-5-17  
Company: TA Date/Time: 9/12/17 1000

Received by: SA  
Received by: SA  
Received by Laboratory: SA





Amherst, NY 14228-2223  
phone 716.691.2600 fax 716.691.7991

TestAmerica Laboratories, Inc.

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
SKB Environmental  
13425 Courthouse Blvd  
Rosemount, MN 55068  
(651) 438-1500 Phone  
(651) 438-1549 FAX  
Project Name: RSMNT 2017 CCR GW Event 8  
Site:  
P O # 3063-17-01128

**Project Manager: Ryan Van Dette**  
Tel/Fax:  
Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below  
 2 weeks  
 1 week  
 2 days  
 1 day

**Site Contact: Nathaniel Beineman** Date: 9/15/17  
**Lab Contact:** Carrier:

COC No: 1 of 2 COCs

Sampler:  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Metals (total) + Mercury	Radium 226 & 228 combined	pH	Sulfate	Chloride	Fluoride	TDS
V-45	9/17	9:20	Grab	Water	7		X	X	X	X	X	X	X	X
V-4D		9:30	Grab	Water	7		X	X	X	X	X	X	X	X
V-55		10:20	Grab	Water	7		X	X	X	X	X	X	X	X
Duplicate #1		-	Grab	Water	7		X	X	X	X	X	X	X	X
V-5D		11:30	Grab	Water	7		X	X	X	X	X	X	X	X
Field Blank #1		11:00	Grab	Water	7		X	X	X	X	X	X	X	X
D-55Z		11:30	Grab	Water	7		X	X	X	X	X	X	X	X
D-5D		12:00	Grab	Water	7		X	X	X	X	X	X	X	X
D-35		12:35	Grab	Water	7		X	X	X	X	X	X	X	X
D-3D		12:55	Grab	Water	7		X	X	X	X	X	X	X	X
Duplicate #2		-	Grab	Water	7		X	X	X	X	X	X	X	X
Field Blank #2		13:30	Grab	Water	7		X	X	X	X	X	X	X	X

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Cooler Temp. (°C): Obs'd: 4.0, 3.4  
Therm ID No.: 3

Received by: [Signature] Date/Time: 9/17 15:00  
Company: TA

Received by: [Signature] Date/Time: 9/17 1600  
Company: TA

Received in Laboratory by: [Signature] Date/Time: 9/17 1000  
Company: TA



# Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-123762-2

SDG Number:

**Login Number: 123762**

**List Number: 1**

**Creator: Conway, Curtis R**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



## Login Sample Receipt Checklist

Client: Waste Connections, Inc.

Job Number: 480-123762-2

SDG Number:

**Login Number: 123762**

**List Number: 2**

**Creator: Taylor, Kristene N**

**List Source: TestAmerica St. Louis**

**List Creation: 09/09/17 09:49 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0,18.0,18.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## Appendix C – Statistical Evaluation Data

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	A	B	C	D	E	F	G	H	I	J	K	L	
1	<b>Background Statistics for Uncensored Full Data Sets</b>												
2	<b>User Selected Options</b>												
3	Date/Time of Computation			1/11/2018 9:48:17 AM									
4	From File			C:\Users\bjanowiak\Desktop\CCR sampling Brian Horan\Rosemount source file.xlsx									
5	Full Precision			OFF									
6	Confidence Coefficient			95%									
7	Coverage			95%									
8	New or Future K Observations			1									
9	Number of Bootstrap Operations			2000									
10													
11	Antimony T^report_result_value												
12													
13	<b>General Statistics</b>												
14	Total Number of Observations					96		Number of Distinct Observations					1
15								Number of Missing Observations					128
16	Minimum					1		First Quartile					1
17	Second Largest					1		Median					1
18	Maximum					1		Third Quartile					1
19	Mean					1		SD					0
20	Coefficient of Variation					0		Skewness					N/A
21													
22	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>												
23	<b>ProUCL (or any other software) should not be used on such a data set!</b>												
24	<b>The data set for variable  Antimony T^report_result_value was not processed!</b>												
25													
26	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>												
27	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>												
28													
29													
30	Arsenic T^report_result_value												
31													
32	<b>General Statistics</b>												
33	Total Number of Observations					96		Number of Distinct Observations					1
34								Number of Missing Observations					128
35	Minimum					1		First Quartile					1
36	Second Largest					1		Median					1
37	Maximum					1		Third Quartile					1
38	Mean					1		SD					0
39	Coefficient of Variation					0		Skewness					N/A
40													
41	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>												
42	<b>ProUCL (or any other software) should not be used on such a data set!</b>												
43	<b>The data set for variable  Arsenic T^report_result_value was not processed!</b>												
44													
45	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>												
46	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>												
47													
48													
49	Barium T^report_result_value												
50													



	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>General Statistics</b>											
52	Total Number of Observations					96	Number of Distinct Observations					27
53							Number of Missing Observations					128
54	Minimum					46	First Quartile					50
55	Second Largest					75	Median					54
56	Maximum					76	Third Quartile					61
57	Mean					56.44	SD					7.697
58	Coefficient of Variation					0.136	Skewness					0.951
59	Mean of logged Data					4.025	SD of logged Data					0.13
60												
61	<b>Critical Values for Background Threshold Values (BTVs)</b>											
62	Tolerance Factor K (For UTL)					1.93	d2max (for USL)					3.196
63												
64	<b>Normal GOF Test</b>											
65	Shapiro Wilk Test Statistic					0.86	<b>Normal GOF Test</b>					
66	5% Shapiro Wilk P Value					6.075E-13	Data Not Normal at 5% Significance Level					
67	Lilliefors Test Statistic					0.208	<b>Lilliefors GOF Test</b>					
68	5% Lilliefors Critical Value					0.0904	Data Not Normal at 5% Significance Level					
69	<b>Data Not Normal at 5% Significance Level</b>											
70												
71	<b>Background Statistics Assuming Normal Distribution</b>											
72	95% UTL with 95% Coverage					71.29	90% Percentile (z)					66.3
73	95% UPL (t)					69.29	95% Percentile (z)					69.1
74	95% USL					81.03	99% Percentile (z)					74.34
75												
76	<b>Gamma GOF Test</b>											
77	A-D Test Statistic					3.971	<b>Anderson-Darling Gamma GOF Test</b>					
78	5% A-D Critical Value					0.751	Data Not Gamma Distributed at 5% Significance Level					
79	K-S Test Statistic					0.198	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
80	5% K-S Critical Value					0.0911	Data Not Gamma Distributed at 5% Significance Level					
81	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
82												
83	<b>Gamma Statistics</b>											
84	k hat (MLE)					58.19	k star (bias corrected MLE)					56.38
85	Theta hat (MLE)					0.97	Theta star (bias corrected MLE)					1.001
86	nu hat (MLE)					11172	nu star (bias corrected)					10824
87	MLE Mean (bias corrected)					56.44	MLE Sd (bias corrected)					7.517
88												
89	<b>Background Statistics Assuming Gamma Distribution</b>											
90	95% Wilson Hilferty (WH) Approx. Gamma UPL					69.41	90% Percentile					66.26
91	95% Hawkins Wixley (HW) Approx. Gamma UPL					69.43	95% Percentile					69.34
92	95% WH Approx. Gamma UTL with 95% Coverage					71.66	99% Percentile					75.38
93	95% HW Approx. Gamma UTL with 95% Coverage					71.71						
94	95% WH USL					83.27	95% HW USL					83.61
95												
96	<b>Lognormal GOF Test</b>											
97	Shapiro Wilk Test Statistic					0.883	<b>Shapiro Wilk Lognormal GOF Test</b>					
98	5% Shapiro Wilk P Value					2.123E-10	Data Not Lognormal at 5% Significance Level					
99	Lilliefors Test Statistic					0.191	<b>Lilliefors Lognormal GOF Test</b>					
100	5% Lilliefors Critical Value					0.0904	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L	
101	<b>Data Not Lognormal at 5% Significance Level</b>												
102													
103	<b>Background Statistics assuming Lognormal Distribution</b>												
104	95% UTL with 95% Coverage				71.89						90% Percentile (z)		66.09
105	95% UPL (t)				69.5						95% Percentile (z)		69.28
106	95% USL				84.74						99% Percentile (z)		75.69
107													
108	<b>Nonparametric Distribution Free Background Statistics</b>												
109	<b>Data do not follow a Discernible Distribution (0.05)</b>												
110													
111	<b>Nonparametric Upper Limits for Background Threshold Values</b>												
112	Order of Statistic, r				94						95% UTL with 95% Coverage		73
113	Approximate f				1.649						Confidence Coefficient (CC) achieved by UTL		0.864
114	95% Percentile Bootstrap UTL with 95% Coverage				73						95% BCA Bootstrap UTL with 95% Coverage		73
115	95% UPL				72						90% Percentile		69
116	90% Chebyshev UPL				79.65						95% Percentile		72
117	95% Chebyshev UPL				90.16						99% Percentile		75.05
118	95% USL				76								
119													
120	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background												
121	data set free of outliers and consists of observations collected from clean unimpacted locations.												
122	The use of USL tends to provide a balance between false positives and false negatives provided the data												
123	represents a background data set and when many onsite observations need to be compared with the BTV.												
124													
125	<b> Beryllium T^report_result_value</b>												
126													
127	<b>General Statistics</b>												
128	Total Number of Observations				96						Number of Distinct Observations		1
129									Number of Missing Observations		128		
130	Minimum				0.7						First Quartile		0.7
131	Second Largest				0.7						Median		0.7
132	Maximum				0.7						Third Quartile		0.7
133	Mean				0.7						SD		1.228E-15
134	Coefficient of Variation				1.754E-15						Skewness		-1.016
135													
136	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>												
137	<b>ProUCL (or any other software) should not be used on such a data set!</b>												
138	<b>The data set for variable  Beryllium T^report_result_value was not processed!</b>												
139													
140	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>												
141	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>												
142													
143													
144	<b> Boron T^report_result_value</b>												
145													
146	<b>General Statistics</b>												
147	Total Number of Observations				96						Number of Distinct Observations		27
148									Number of Missing Observations		128		
149	Minimum				20						First Quartile		20
150	Second Largest				79						Median		20

	A	B	C	D	E	F	G	H	I	J	K	L
151	Maximum					79	Third Quartile					29
152	Mean					29.09	SD					15.78
153	Coefficient of Variation					0.542	Skewness					1.704
154	Mean of logged Data					3.265	SD of logged Data					0.425
155												
156	<b>Critical Values for Background Threshold Values (BTVs)</b>											
157	Tolerance Factor K (For UTL)					1.93	d2max (for USL)					3.196
158												
159	<b>Normal GOF Test</b>											
160	Shapiro Wilk Test Statistic					0.632	<b>Normal GOF Test</b>					
161	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
162	Lilliefors Test Statistic					0.348	<b>Lilliefors GOF Test</b>					
163	5% Lilliefors Critical Value					0.0904	Data Not Normal at 5% Significance Level					
164	<b>Data Not Normal at 5% Significance Level</b>											
165												
166	<b>Background Statistics Assuming Normal Distribution</b>											
167	95% UTL with 95% Coverage					59.54	90% Percentile (z)					49.31
168	95% UPL (t)					55.44	95% Percentile (z)					55.04
169	95% USL					79.51	99% Percentile (z)					65.8
170												
171	<b>Gamma GOF Test</b>											
172	A-D Test Statistic					14.99	<b>Anderson-Darling Gamma GOF Test</b>					
173	5% A-D Critical Value					0.755	Data Not Gamma Distributed at 5% Significance Level					
174	K-S Test Statistic					0.334	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
175	5% K-S Critical Value					0.0915	Data Not Gamma Distributed at 5% Significance Level					
176	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
177												
178	<b>Gamma Statistics</b>											
179	k hat (MLE)					4.905	k star (bias corrected MLE)					4.759
180	Theta hat (MLE)					5.931	Theta star (bias corrected MLE)					6.113
181	nu hat (MLE)					941.8	nu star (bias corrected)					913.7
182	MLE Mean (bias corrected)					29.09	MLE Sd (bias corrected)					13.34
183												
184	<b>Background Statistics Assuming Gamma Distribution</b>											
185	95% Wilson Hilferty (WH) Approx. Gamma UPL					53.9	90% Percentile					46.95
186	95% Hawkins Wixley (HW) Approx. Gamma UPL					53.72	95% Percentile					53.92
187	95% WH Approx. Gamma UTL with 95% Coverage					59.25	99% Percentile					68.68
188	95% HW Approx. Gamma UTL with 95% Coverage					59.27						
189	95% WH USL					90.35	95% HW USL					92.61
190												
191	<b>Lognormal GOF Test</b>											
192	Shapiro Wilk Test Statistic					0.659	<b>Shapiro Wilk Lognormal GOF Test</b>					
193	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
194	Lilliefors Test Statistic					0.318	<b>Lilliefors Lognormal GOF Test</b>					
195	5% Lilliefors Critical Value					0.0904	Data Not Lognormal at 5% Significance Level					
196	<b>Data Not Lognormal at 5% Significance Level</b>											
197												
198	<b>Background Statistics assuming Lognormal Distribution</b>											
199	95% UTL with 95% Coverage					59.42	90% Percentile (z)					45.12
200	95% UPL (t)					53.21	95% Percentile (z)					52.65

	A	B	C	D	E	F	G	H	I	J	K	L
201	95% USL				101.7	99% Percentile (z)					70.32	
202												
203	<b>Nonparametric Distribution Free Background Statistics</b>											
204	<b>Data do not follow a Discernible Distribution (0.05)</b>											
205												
206	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
207	Order of Statistic, r				94	95% UTL with 95% Coverage					74	
208	Approximate f				1.649	Confidence Coefficient (CC) achieved by UTL					0.864	
209	95% Percentile Bootstrap UTL with 95% Coverage				74	95% BCA Bootstrap UTL with 95% Coverage					74	
210	95% UPL				65.6	90% Percentile					54.5	
211	90% Chebyshev UPL				76.67	95% Percentile					62.75	
212	95% Chebyshev UPL				98.22	99% Percentile					79	
213	95% USL				79							
214												
215	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
216	data set free of outliers and consists of observations collected from clean unimpacted locations.											
217	The use of USL tends to provide a balance between false positives and false negatives provided the data											
218	represents a background data set and when many onsite observations need to be compared with the BTV.											
219												
220	Cadmium T^report_result_value											
221												
222	<b>General Statistics</b>											
223	Total Number of Observations				94	Number of Distinct Observations					1	
224						Number of Missing Observations					130	
225	Minimum				0.5	First Quartile					0.5	
226	Second Largest				0.5	Median					0.5	
227	Maximum				0.5	Third Quartile					0.5	
228	Mean				0.5	SD					0	
229	Coefficient of Variation				0	Skewness					N/A	
230												
231	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>											
232	<b>ProUCL (or any other software) should not be used on such a data set!</b>											
233	<b>The data set for variable  Cadmium T^report_result_value was not processed!</b>											
234												
235	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>											
236	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>											
237												
238												
239	Calcium T^report_result_value											
240												
241	<b>General Statistics</b>											
242	Total Number of Observations				103	Number of Distinct Observations					74	
243						Number of Missing Observations					121	
244	Minimum				10200	First Quartile					91750	
245	Second Largest				121000	Median					97400	
246	Maximum				122000	Third Quartile					102500	
247	Mean				96313	SD					13943	
248	Coefficient of Variation				0.145	Skewness					-2.324	
249	Mean of logged Data				11.46	SD of logged Data					0.25	
250												

	A	B	C	D	E	F	G	H	I	J	K	L
251	<b>Critical Values for Background Threshold Values (BTVs)</b>											
252	Tolerance Factor K (For UTL)				1.919		d2max (for USL)				3.22	
253												
254	<b>Normal GOF Test</b>											
255	Shapiro Wilk Test Statistic				0.851		<b>Normal GOF Test</b>					
256	5% Shapiro Wilk P Value				1.665E-15		Data Not Normal at 5% Significance Level					
257	Lilliefors Test Statistic				0.13		<b>Lilliefors GOF Test</b>					
258	5% Lilliefors Critical Value				0.0873		Data Not Normal at 5% Significance Level					
259	<b>Data Not Normal at 5% Significance Level</b>											
260												
261	<b>Background Statistics Assuming Normal Distribution</b>											
262	95% UTL with 95% Coverage		123067						90% Percentile (z)		114181	
263	95% UPL (t)		119569						95% Percentile (z)		119246	
264	95% USL		141202						99% Percentile (z)		128748	
265												
266	<b>Gamma GOF Test</b>											
267	A-D Test Statistic				7.729		<b>Anderson-Darling Gamma GOF Test</b>					
268	5% A-D Critical Value				0.75		Data Not Gamma Distributed at 5% Significance Level					
269	K-S Test Statistic				0.204		<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
270	5% K-S Critical Value				0.0885		Data Not Gamma Distributed at 5% Significance Level					
271	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
272												
273	<b>Gamma Statistics</b>											
274	k hat (MLE)		25.47						k star (bias corrected MLE)		24.73	
275	Theta hat (MLE)		3782						Theta star (bias corrected MLE)		3894	
276	nu hat (MLE)		5246						nu star (bias corrected)		5095	
277	MLE Mean (bias corrected)		96313						MLE Sd (bias corrected)		19367	
278												
279	<b>Background Statistics Assuming Gamma Distribution</b>											
280	95% Wilson Hilferty (WH) Approx. Gamma UPL		129727						90% Percentile		121816	
281	95% Hawkins Wixley (HW) Approx. Gamma UPL		132231						95% Percentile		130224	
282	95% WH Approx. Gamma UTL with 95% Coverage		135540						99% Percentile		146995	
283	95% HW Approx. Gamma UTL with 95% Coverage		138645									
284	95% WH USL		168473						95% HW USL		175705	
285												
286	<b>Lognormal GOF Test</b>											
287	Shapiro Wilk Test Statistic				0.495		<b>Shapiro Wilk Lognormal GOF Test</b>					
288	5% Shapiro Wilk P Value				0		Data Not Lognormal at 5% Significance Level					
289	Lilliefors Test Statistic				0.241		<b>Lilliefors Lognormal GOF Test</b>					
290	5% Lilliefors Critical Value				0.0873		Data Not Lognormal at 5% Significance Level					
291	<b>Data Not Lognormal at 5% Significance Level</b>											
292												
293	<b>Background Statistics assuming Lognormal Distribution</b>											
294	95% UTL with 95% Coverage		152694						90% Percentile (z)		130166	
295	95% UPL (t)		143393						95% Percentile (z)		142565	
296	95% USL		211494						99% Percentile (z)		169099	
297												
298	<b>Nonparametric Distribution Free Background Statistics</b>											
299	<b>Data do not follow a Discernible Distribution (0.05)</b>											
300												

	A	B	C	D	E	F	G	H	I	J	K	L
301	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
302	Order of Statistic, r					101	95% UTL with 95% Coverage					121000
303	Approximate f					1.772	Confidence Coefficient (CC) achieved by UTL					0.894
304	95% Percentile Bootstrap UTL with 95% Coverage					120800	95% BCA Bootstrap UTL with 95% Coverage					120700
305	95% UPL					118800	90% Percentile					109600
306	90% Chebyshev UPL					138343	95% Percentile					118000
307	95% Chebyshev UPL					157382	99% Percentile					121000
308	95% USL					122000						
309												
310	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
311	data set free of outliers and consists of observations collected from clean unimpacted locations.											
312	The use of USL tends to provide a balance between false positives and false negatives provided the data											
313	represents a background data set and when many onsite observations need to be compared with the BTV.											
314												
315	Chloride T^report_result_value											
316												
317	<b>General Statistics</b>											
318	Total Number of Observations					106	Number of Distinct Observations					92
319							Number of Missing Observations					124
320	Minimum					13800	First Quartile					32400
321	Second Largest					67800	Median					40850
322	Maximum					78400	Third Quartile					45475
323	Mean					38855	SD					12031
324	Coefficient of Variation					0.31	Skewness					0.141
325	Mean of logged Data					10.51	SD of logged Data					0.349
326												
327	<b>Critical Values for Background Threshold Values (BTVs)</b>											
328	Tolerance Factor K (For UTL)					1.915	d2max (for USL)					3.229
329												
330	<b>Normal GOF Test</b>											
331	Shapiro Wilk Test Statistic					0.957	<b>Normal GOF Test</b>					
332	5% Shapiro Wilk P Value					0.00919	Data Not Normal at 5% Significance Level					
333	Lilliefors Test Statistic					0.108	<b>Lilliefors GOF Test</b>					
334	5% Lilliefors Critical Value					0.0861	Data Not Normal at 5% Significance Level					
335	<b>Data Not Normal at 5% Significance Level</b>											
336												
337	<b>Background Statistics Assuming Normal Distribution</b>											
338	95% UTL with 95% Coverage					61889	90% Percentile (z)					54273
339	95% UPL (t)					58914	95% Percentile (z)					58644
340	95% USL					77706	99% Percentile (z)					66843
341												
342	<b>Gamma GOF Test</b>											
343	A-D Test Statistic					2.646	<b>Anderson-Darling Gamma GOF Test</b>					
344	5% A-D Critical Value					0.752	Data Not Gamma Distributed at 5% Significance Level					
345	K-S Test Statistic					0.136	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
346	5% K-S Critical Value					0.0879	Data Not Gamma Distributed at 5% Significance Level					
347	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
348												
349	<b>Gamma Statistics</b>											
350	k hat (MLE)					9.299	k star (bias corrected MLE)					9.042

	A	B	C	D	E	F	G	H	I	J	K	L
351	Theta hat (MLE)					4178	Theta star (bias corrected MLE)					4297
352	nu hat (MLE)					1971	nu star (bias corrected)					1917
353	MLE Mean (bias corrected)					38855	MLE Sd (bias corrected)					12921
354												
355	<b>Background Statistics Assuming Gamma Distribution</b>											
356	95% Wilson Hilferty (WH) Approx. Gamma UPL					62435	90% Percentile					56060
357	95% Hawkins Wixley (HW) Approx. Gamma UPL					63146	95% Percentile					62258
358	95% WH Approx. Gamma UTL with 95% Coverage			95% Coverage		66875	99% Percentile					75033
359	95% HW Approx. Gamma UTL with 95% Coverage			95% Coverage		67887						
360	95% WH USL					94050	95% HW USL					97725
361												
362	<b>Lognormal GOF Test</b>											
363	Shapiro Wilk Test Statistic					0.911	<b>Shapiro Wilk Lognormal GOF Test</b>					
364	5% Shapiro Wilk P Value					4.2581E-8	Data Not Lognormal at 5% Significance Level					
365	Lilliefors Test Statistic					0.153	<b>Lilliefors Lognormal GOF Test</b>					
366	5% Lilliefors Critical Value					0.0861	Data Not Lognormal at 5% Significance Level					
367	<b>Data Not Lognormal at 5% Significance Level</b>											
368												
369	<b>Background Statistics assuming Lognormal Distribution</b>											
370	95% UTL with 95% Coverage			95% Coverage		71822	90% Percentile (z)					57568
371	95% UPL (t)					65876	95% Percentile (z)					65361
372	95% USL					113709	99% Percentile (z)					82938
373												
374	<b>Nonparametric Distribution Free Background Statistics</b>											
375	<b>Data do not follow a Discernible Distribution (0.05)</b>											
376												
377	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
378	Order of Statistic, r					104	95% UTL with 95% Coverage					63300
379	Approximate f					1.825	Confidence Coefficient (CC) achieved by UTL					0.904
380	95% Percentile Bootstrap UTL with 95% Coverage			95% Coverage		63250	95% BCA Bootstrap UTL with 95% Coverage					63250
381	95% UPL					61640	90% Percentile					50050
382	90% Chebyshev UPL					75118	95% Percentile					59275
383	95% Chebyshev UPL					91543	99% Percentile					67575
384	95% USL					78400						
385												
386	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
387	data set free of outliers and consists of observations collected from clean unimpacted locations.											
388	The use of USL tends to provide a balance between false positives and false negatives provided the data											
389	represents a background data set and when many onsite observations need to be compared with the BTV.											
390												
391	Chromium T^report_result_value											
392												
393	<b>General Statistics</b>											
394	Total Number of Observations					94	Number of Distinct Observations					7
395							Number of Missing Observations					130
396	Minimum					4	First Quartile					4
397	Second Largest					6.5	Median					4
398	Maximum					6.8	Third Quartile					4
399	Mean					4.096	SD					0.434
400	Coefficient of Variation					0.106	Skewness					5.157

	A	B	C	D	E	F	G	H	I	J	K	L
401	Mean of logged Data					1.406	SD of logged Data					0.0856
402												
403	<b>Critical Values for Background Threshold Values (BTVs)</b>											
404	Tolerance Factor K (For UTL)					1.933	d2max (for USL)					3.188
405												
406	<b>Normal GOF Test</b>											
407	Shapiro Wilk Test Statistic					0.25	<b>Normal GOF Test</b>					
408	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
409	Lilliefors Test Statistic					0.523	<b>Lilliefors GOF Test</b>					
410	5% Lilliefors Critical Value					0.0914	Data Not Normal at 5% Significance Level					
411	<b>Data Not Normal at 5% Significance Level</b>											
412												
413	<b>Background Statistics Assuming Normal Distribution</b>											
414	95% UTL with 95% Coverage					4.935	90% Percentile (z)					4.652
415	95% UPL (t)					4.821	95% Percentile (z)					4.81
416	95% USL					5.48	99% Percentile (z)					5.106
417												
418	<b>Gamma GOF Test</b>											
419	A-D Test Statistic					31.42	<b>Anderson-Darling Gamma GOF Test</b>					
420	5% A-D Critical Value					0.75	Data Not Gamma Distributed at 5% Significance Level					
421	K-S Test Statistic					0.526	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
422	5% K-S Critical Value					0.092	Data Not Gamma Distributed at 5% Significance Level					
423	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
424												
425	<b>Gamma Statistics</b>											
426	k hat (MLE)					119.9	k star (bias corrected MLE)					116
427	Theta hat (MLE)					0.0342	Theta star (bias corrected MLE)					0.0353
428	nu hat (MLE)					22532	nu star (bias corrected)					21814
429	MLE Mean (bias corrected)					4.096	MLE Sd (bias corrected)					0.38
430												
431	<b>Background Statistics Assuming Gamma Distribution</b>											
432	95% Wilson Hilferty (WH) Approx. Gamma UPL					4.742	90% Percentile					4.59
433	95% Hawkins Wixley (HW) Approx. Gamma UPL					4.733	95% Percentile					4.741
434	95% WH Approx. Gamma UTL with 95% Coverage					4.852	99% Percentile					5.032
435	95% HW Approx. Gamma UTL with 95% Coverage					4.842						
436	95% WH USL					5.399	95% HW USL					5.389
437												
438	<b>Lognormal GOF Test</b>											
439	Shapiro Wilk Test Statistic					0.258	<b>Shapiro Wilk Lognormal GOF Test</b>					
440	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
441	Lilliefors Test Statistic					0.526	<b>Lilliefors Lognormal GOF Test</b>					
442	5% Lilliefors Critical Value					0.0914	Data Not Lognormal at 5% Significance Level					
443	<b>Data Not Lognormal at 5% Significance Level</b>											
444												
445	<b>Background Statistics assuming Lognormal Distribution</b>											
446	95% UTL with 95% Coverage					4.813	90% Percentile (z)					4.552
447	95% UPL (t)					4.706	95% Percentile (z)					4.695
448	95% USL					5.359	99% Percentile (z)					4.978
449												
450	<b>Nonparametric Distribution Free Background Statistics</b>											



	A	B	C	D	E	F	G	H	I	J	K	L
451	<b>Data do not follow a Discernible Distribution (0.05)</b>											
452												
453	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
454	Order of Statistic, r				92		95% UTL with 95% Coverage				5.7	
455	Approximate f				1.614		Confidence Coefficient (CC) achieved by UTL				0.855	
456	95% Percentile Bootstrap UTL with 95% Coverage				5.7		95% BCA Bootstrap UTL with 95% Coverage				5.7	
457	95% UPL				4.675		90% Percentile				4	
458	90% Chebyshev UPL				5.405		95% Percentile				4.535	
459	95% Chebyshev UPL				5.999		99% Percentile				6.521	
460	95% USL				6.8							
461												
462	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
463	data set free of outliers and consists of observations collected from clean unimpacted locations.											
464	The use of USL tends to provide a balance between false positives and false negatives provided the data											
465	represents a background data set and when many onsite observations need to be compared with the BTV.											
466												
467	Cobalt T^report_result_value											
468												
469	<b>General Statistics</b>											
470	Total Number of Observations				95		Number of Distinct Observations				13	
471							Number of Missing Observations				129	
472	Minimum				0.3		First Quartile				0.3	
473	Second Largest				0.88		Median				0.3	
474	Maximum				1.2		Third Quartile				0.3	
475	Mean				0.348		SD				0.147	
476	Coefficient of Variation				0.422		Skewness				3.669	
477	Mean of logged Data				-1.106		SD of logged Data				0.277	
478												
479	<b>Critical Values for Background Threshold Values (BTVs)</b>											
480	Tolerance Factor K (For UTL)				1.932		d2max (for USL)				3.192	
481												
482	<b>Normal GOF Test</b>											
483	Shapiro Wilk Test Statistic				0.393		<b>Normal GOF Test</b>					
484	5% Shapiro Wilk P Value				0		Data Not Normal at 5% Significance Level					
485	Lilliefors Test Statistic				0.48		<b>Lilliefors GOF Test</b>					
486	5% Lilliefors Critical Value				0.0909		Data Not Normal at 5% Significance Level					
487	<b>Data Not Normal at 5% Significance Level</b>											
488												
489	<b>Background Statistics Assuming Normal Distribution</b>											
490	95% UTL with 95% Coverage				0.631		90% Percentile (z)				0.536	
491	95% UPL (t)				0.593		95% Percentile (z)				0.589	
492	95% USL				0.817		99% Percentile (z)				0.689	
493												
494	<b>Gamma GOF Test</b>											
495	A-D Test Statistic				26.77		<b>Anderson-Darling Gamma GOF Test</b>					
496	5% A-D Critical Value				0.752		Data Not Gamma Distributed at 5% Significance Level					
497	K-S Test Statistic				0.491		<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
498	5% K-S Critical Value				0.0918		Data Not Gamma Distributed at 5% Significance Level					
499	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
500												

	A	B	C	D	E	F	G	H	I	J	K	L
501	<b>Gamma Statistics</b>											
502	k hat (MLE)				10.16		k star (bias corrected MLE)				9.848	
503	Theta hat (MLE)				0.0342		Theta star (bias corrected MLE)				0.0353	
504	nu hat (MLE)				1931		nu star (bias corrected)				1871	
505	MLE Mean (bias corrected)				0.348		MLE Sd (bias corrected)				0.111	
506												
507	<b>Background Statistics Assuming Gamma Distribution</b>											
508	95% Wilson Hilferty (WH) Approx. Gamma UPL				0.546		90% Percentile				0.495	
509	95% Hawkins Wixley (HW) Approx. Gamma UPL				0.541		95% Percentile				0.548	
510	95% WH Approx. Gamma UTL with 95% Coverage				0.586		99% Percentile				0.656	
511	95% HW Approx. Gamma UTL with 95% Coverage				0.581							
512	95% WH USL				0.803		95% HW USL				0.802	
513												
514	<b>Lognormal GOF Test</b>											
515	Shapiro Wilk Test Statistic				0.414		<b>Shapiro Wilk Lognormal GOF Test</b>					
516	5% Shapiro Wilk P Value				0		Data Not Lognormal at 5% Significance Level					
517	Lilliefors Test Statistic				0.491		<b>Lilliefors Lognormal GOF Test</b>					
518	5% Lilliefors Critical Value				0.0909		Data Not Lognormal at 5% Significance Level					
519	<b>Data Not Lognormal at 5% Significance Level</b>											
520												
521	<b>Background Statistics assuming Lognormal Distribution</b>											
522	95% UTL with 95% Coverage				0.565		90% Percentile (z)				0.472	
523	95% UPL (t)				0.525		95% Percentile (z)				0.522	
524	95% USL				0.801		99% Percentile (z)				0.63	
525												
526	<b>Nonparametric Distribution Free Background Statistics</b>											
527	<b>Data do not follow a Discernible Distribution (0.05)</b>											
528												
529	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
530	Order of Statistic, r				93		95% UTL with 95% Coverage				0.8	
531	Approximate f				1.632		Confidence Coefficient (CC) achieved by UTL				0.859	
532	95% Percentile Bootstrap UTL with 95% Coverage				0.8		95% BCA Bootstrap UTL with 95% Coverage				0.8	
533	95% UPL				0.752		90% Percentile				0.502	
534	90% Chebyshev UPL				0.791		95% Percentile				0.684	
535	95% Chebyshev UPL				0.991		99% Percentile				0.899	
536	95% USL				1.2							
537												
538	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
539	data set free of outliers and consists of observations collected from clean unimpacted locations.											
540	The use of USL tends to provide a balance between false positives and false negatives provided the data											
541	represents a background data set and when many onsite observations need to be compared with the BTV.											
542												
543	Fluoride T^report_result_value											
544												
545	<b>General Statistics</b>											
546	Total Number of Observations				94		Number of Distinct Observations				4	
547							Number of Missing Observations				130	
548	Minimum				100		First Quartile				100	
549	Second Largest				250		Median				250	
550	Maximum				250		Third Quartile				250	

	A	B	C	D	E	F	G	H	I	J	K	L
551	Mean					178.6	SD					74.93
552	Coefficient of Variation					0.419	Skewness					-0.0896
553	Mean of logged Data					5.087	SD of logged Data					0.457
554												
555	<b>Critical Values for Background Threshold Values (BTVs)</b>											
556	Tolerance Factor K (For UTL)					1.933	d2max (for USL)					3.188
557												
558	<b>Normal GOF Test</b>											
559	Shapiro Wilk Test Statistic					0.621	<b>Normal GOF Test</b>					
560	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
561	Lilliefors Test Statistic					0.351	<b>Lilliefors GOF Test</b>					
562	5% Lilliefors Critical Value					0.0914	Data Not Normal at 5% Significance Level					
563	<b>Data Not Normal at 5% Significance Level</b>											
564												
565	<b>Background Statistics Assuming Normal Distribution</b>											
566	95% UTL with 95% Coverage		323.5		90% Percentile (z)					274.6		
567	95% UPL (t)		303.8		95% Percentile (z)					301.9		
568	95% USL		417.5		99% Percentile (z)					352.9		
569												
570	<b>Gamma GOF Test</b>											
571	A-D Test Statistic					16.4	<b>Anderson-Darling Gamma GOF Test</b>					
572	5% A-D Critical Value					0.754	Data Not Gamma Distributed at 5% Significance Level					
573	K-S Test Statistic					0.352	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
574	5% K-S Critical Value					0.0925	Data Not Gamma Distributed at 5% Significance Level					
575	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
576												
577	<b>Gamma Statistics</b>											
578	k hat (MLE)					5.239	k star (bias corrected MLE)					5.079
579	Theta hat (MLE)					34.09	Theta star (bias corrected MLE)					35.17
580	nu hat (MLE)					984.9	nu star (bias corrected)					954.8
581	MLE Mean (bias corrected)					178.6	MLE Sd (bias corrected)					79.26
582												
583	<b>Background Statistics Assuming Gamma Distribution</b>											
584	95% Wilson Hiferty (WH) Approx. Gamma UPL					327.5	90% Percentile					284.7
585	95% Hawkins Wixley (HW) Approx. Gamma UPL					331.8	95% Percentile					325.7
586	95% WH Approx. Gamma UTL with 95% Coverage		359.5		99% Percentile					412.4		
587	95% HW Approx. Gamma UTL with 95% Coverage		366.2									
588	95% WH USL					541.1	95% HW USL					569
589												
590	<b>Lognormal GOF Test</b>											
591	Shapiro Wilk Test Statistic					0.624	<b>Shapiro Wilk Lognormal GOF Test</b>					
592	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
593	Lilliefors Test Statistic					0.351	<b>Lilliefors Lognormal GOF Test</b>					
594	5% Lilliefors Critical Value					0.0914	Data Not Lognormal at 5% Significance Level					
595	<b>Data Not Lognormal at 5% Significance Level</b>											
596												
597	<b>Background Statistics assuming Lognormal Distribution</b>											
598	95% UTL with 95% Coverage		391.3		90% Percentile (z)					290.6		
599	95% UPL (t)		347		95% Percentile (z)					343		
600	95% USL		694		99% Percentile (z)					468.2		

	A	B	C	D	E	F	G	H	I	J	K	L		
601														
602	<b>Nonparametric Distribution Free Background Statistics</b>													
603	<b>Data do not follow a Discernible Distribution (0.05)</b>													
604														
605	<b>Nonparametric Upper Limits for Background Threshold Values</b>													
606	Order of Statistic, r				92		95% UTL with 95% Coverage				250			
607	Approximate f				1.614		Confidence Coefficient (CC) achieved by UTL				0.855			
608	95% Percentile Bootstrap UTL with 95% Coverage				250		95% BCA Bootstrap UTL with 95% Coverage				250			
609	95% UPL				250		90% Percentile				250			
610	90% Chebyshev UPL				404.6		95% Percentile				250			
611	95% Chebyshev UPL				507		99% Percentile				250			
612	95% USL				250									
613														
614	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background													
615	data set free of outliers and consists of observations collected from clean unimpacted locations.													
616	The use of USL tends to provide a balance between false positives and false negatives provided the data													
617	represents a background data set and when many onsite observations need to be compared with the BTV.													
618														
619	Lead T^report_result_value													
620														
621	<b>General Statistics</b>													
622	Total Number of Observations				96		Number of Distinct Observations				1			
623									Number of Missing Observations				128	
624	Minimum				10		First Quartile				10			
625	Second Largest				10		Median				10			
626	Maximum				10		Third Quartile				10			
627	Mean				10		SD				0			
628	Coefficient of Variation				0		Skewness				N/A			
629														
630	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>													
631	<b>ProUCL (or any other software) should not be used on such a data set!</b>													
632	<b>The data set for variable  Lead T^report_result_value was not processed!</b>													
633														
634	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>													
635	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>													
636														
637														
638	Lithium T^report_result_value													
639														
640	<b>General Statistics</b>													
641	Total Number of Observations				96		Number of Distinct Observations				1			
642									Number of Missing Observations				128	
643	Minimum				30		First Quartile				30			
644	Second Largest				30		Median				30			
645	Maximum				30		Third Quartile				30			
646	Mean				30		SD				0			
647	Coefficient of Variation				0		Skewness				N/A			
648														
649	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>													
650	<b>ProUCL (or any other software) should not be used on such a data set!</b>													

	A	B	C	D	E	F	G	H	I	J	K	L	
651	The data set for variable  Lithium T^report_result_value was not processed!												
652													
653	If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.												
654	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
655													
656													
657	Mercury T^report_result_value												
658													
659	<b>General Statistics</b>												
660	Total Number of Observations				103		Number of Distinct Observations				1		
661									Number of Missing Observations				121
662	Minimum				0.2		First Quartile				0.2		
663	Second Largest				0.2		Median				0.2		
664	Maximum				0.2		Third Quartile				0.2		
665	Mean				0.2		SD				4.184E-16		
666	Coefficient of Variation				2.092E-15		Skewness				1.015		
667													
668	Warning: There is only one distinct observation value in this data set - resulting in '0' variance!												
669	ProUCL (or any other software) should not be used on such a data set!												
670	The data set for variable  Mercury T^report_result_value was not processed!												
671													
672	If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.												
673	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
674													
675													
676	MOLYBDENUM T^report_result_value												
677													
678	<b>General Statistics</b>												
679	Total Number of Observations				96		Number of Distinct Observations				1		
680									Number of Missing Observations				128
681	Minimum				1		First Quartile				1		
682	Second Largest				1		Median				1		
683	Maximum				1		Third Quartile				1		
684	Mean				1		SD				0		
685	Coefficient of Variation				0		Skewness				N/A		
686													
687	Warning: There is only one distinct observation value in this data set - resulting in '0' variance!												
688	ProUCL (or any other software) should not be used on such a data set!												
689	The data set for variable  MOLYBDENUM T^report_result_value was not processed!												
690													
691	If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.												
692	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
693													
694													
695	pH T^report_result_value												
696													
697	<b>General Statistics</b>												
698	Total Number of Observations				105		Number of Distinct Observations				14		
699									Number of Missing Observations				125
700	Minimum				7.3		First Quartile				7.57		

	A	B	C	D	E	F	G	H	I	J	K	L
701	Second Largest					8.1	Median					7.7
702	Maximum					8.1	Third Quartile					7.7
703	Mean					7.662	SD					0.166
704	Coefficient of Variation					0.0217	Skewness					0.262
705	Mean of logged Data					2.036	SD of logged Data					0.0216
706												
707	<b>Critical Values for Background Threshold Values (BTVs)</b>											
708	Tolerance Factor K (For UTL)					1.916	d2max (for USL)					3.226
709												
710	<b>Normal GOF Test</b>											
711	Shapiro Wilk Test Statistic					0.953	<b>Normal GOF Test</b>					
712	5% Shapiro Wilk P Value					0.00383	Data Not Normal at 5% Significance Level					
713	Lilliefors Test Statistic					0.163	<b>Lilliefors GOF Test</b>					
714	5% Lilliefors Critical Value					0.0865	Data Not Normal at 5% Significance Level					
715	<b>Data Not Normal at 5% Significance Level</b>											
716												
717	<b>Background Statistics Assuming Normal Distribution</b>											
718	95% UTL with 95% Coverage					7.981	90% Percentile (z)					7.875
719	95% UPL (t)					7.939	95% Percentile (z)					7.936
720	95% USL					8.198	99% Percentile (z)					8.049
721												
722	<b>Gamma GOF Test</b>											
723	A-D Test Statistic					1.68	<b>Anderson-Darling Gamma GOF Test</b>					
724	5% A-D Critical Value					0.75	Data Not Gamma Distributed at 5% Significance Level					
725	K-S Test Statistic					0.159	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
726	5% K-S Critical Value					0.0879	Data Not Gamma Distributed at 5% Significance Level					
727	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
728												
729	<b>Gamma Statistics</b>											
730	k hat (MLE)					2153	k star (bias corrected MLE)					2092
731	Theta hat (MLE)					0.00356	Theta star (bias corrected MLE)					0.00366
732	nu hat (MLE)					452234	nu star (bias corrected)					439314
733	MLE Mean (bias corrected)					7.662	MLE Sd (bias corrected)					0.168
734												
735	<b>Background Statistics Assuming Gamma Distribution</b>											
736	95% Wilson Hilferty (WH) Approx. Gamma UPL					7.941	90% Percentile					7.878
737	95% Hawkins Wixley (HW) Approx. Gamma UPL					7.941	95% Percentile					7.94
738	95% WH Approx. Gamma UTL with 95% Coverage					7.983	99% Percentile					8.057
739	95% HW Approx. Gamma UTL with 95% Coverage					7.984						
740	95% WH USL					8.209	95% HW USL					8.21
741												
742	<b>Lognormal GOF Test</b>											
743	Shapiro Wilk Test Statistic					0.954	<b>Shapiro Wilk Lognormal GOF Test</b>					
744	5% Shapiro Wilk P Value					0.00525	Data Not Lognormal at 5% Significance Level					
745	Lilliefors Test Statistic					0.158	<b>Lilliefors Lognormal GOF Test</b>					
746	5% Lilliefors Critical Value					0.0865	Data Not Lognormal at 5% Significance Level					
747	<b>Data Not Lognormal at 5% Significance Level</b>											
748												
749	<b>Background Statistics assuming Lognormal Distribution</b>											
750	95% UTL with 95% Coverage					7.985	90% Percentile (z)					7.876

	A	B	C	D	E	F	G	H	I	J	K	L
751					95% UPL (t)	7.942				95% Percentile (z)		7.938
752					95% USL	8.214				99% Percentile (z)		8.056
753												
754	<b>Nonparametric Distribution Free Background Statistics</b>											
755	<b>Data do not follow a Discernible Distribution (0.05)</b>											
756												
757	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
758				Order of Statistic, r	103					95% UTL with 95% Coverage		8
759				Approximate f	1.807					Confidence Coefficient (CC) achieved by UTL		0.901
760				95% Percentile Bootstrap UTL with 95% Coverage	8					95% BCA Bootstrap UTL with 95% Coverage		8
761				95% UPL	7.988					90% Percentile		7.9
762				90% Chebyshev UPL	8.163					95% Percentile		7.948
763				95% Chebyshev UPL	8.39					99% Percentile		8.096
764				95% USL	8.1							
765												
766	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
767	data set free of outliers and consists of observations collected from clean unimpacted locations.											
768	The use of USL tends to provide a balance between false positives and false negatives provided the data											
769	represents a background data set and when many onsite observations need to be compared with the BTV.											
770												
771	Radium (226) T^report_result_value											
772												
773	<b>General Statistics</b>											
774				Total Number of Observations	96					Number of Distinct Observations		88
775										Number of Missing Observations		128
776				Minimum	0.0634					First Quartile		0.0926
777				Second Largest	79.2					Median		0.124
778				Maximum	97.1					Third Quartile		28.4
779				Mean	16.17					SD		24.39
780				Coefficient of Variation	1.509					Skewness		1.376
781				Mean of logged Data	-0.0737					SD of logged Data		2.915
782												
783	<b>Critical Values for Background Threshold Values (BTVs)</b>											
784				Tolerance Factor K (For UTL)	1.93					d2max (for USL)		3.196
785												
786	<b>Normal GOF Test</b>											
787				Shapiro Wilk Test Statistic	0.7					<b>Normal GOF Test</b>		
788				5% Shapiro Wilk P Value	0					Data Not Normal at 5% Significance Level		
789				Lilliefors Test Statistic	0.369					<b>Lilliefors GOF Test</b>		
790				5% Lilliefors Critical Value	0.0904					Data Not Normal at 5% Significance Level		
791	<b>Data Not Normal at 5% Significance Level</b>											
792												
793	<b>Background Statistics Assuming Normal Distribution</b>											
794				95% UTL with 95% Coverage	63.23					90% Percentile (z)		47.42
795				95% UPL (t)	56.89					95% Percentile (z)		56.28
796				95% USL	94.1					99% Percentile (z)		72.9
797												
798	<b>Gamma GOF Test</b>											
799				A-D Test Statistic	12.47					<b>Anderson-Darling Gamma GOF Test</b>		
800				5% A-D Critical Value	0.893					Data Not Gamma Distributed at 5% Significance Level		

	A	B	C	D	E	F	G	H	I	J	K	L
801	K-S Test Statistic					0.367	Kolmogrov-Smirnoff Gamma GOF Test					
802	5% K-S Critical Value					0.1	Data Not Gamma Distributed at 5% Significance Level					
803	Data Not Gamma Distributed at 5% Significance Level											
804												
805	Gamma Statistics											
806	k hat (MLE)					0.249	k star (bias corrected MLE)					0.248
807	Theta hat (MLE)					64.96	Theta star (bias corrected MLE)					65.18
808	nu hat (MLE)					47.78	nu star (bias corrected)					47.62
809	MLE Mean (bias corrected)					16.17	MLE Sd (bias corrected)					32.46
810												
811	Background Statistics Assuming Gamma Distribution											
812	95% Wilson Hilferty (WH) Approx. Gamma UPL					65.59	90% Percentile					48.55
813	95% Hawkins Wixley (HW) Approx. Gamma UPL					70.75	95% Percentile					78.43
814	95% WH Approx. Gamma UTL with 95% Coverage					86.15	99% Percentile					158.1
815	95% HW Approx. Gamma UTL with 95% Coverage					98.58						
816	95% WH USL					248.1	95% HW USL					365
817												
818	Lognormal GOF Test											
819	Shapiro Wilk Test Statistic					0.688	Shapiro Wilk Lognormal GOF Test					
820	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
821	Lilliefors Test Statistic					0.341	Lilliefors Lognormal GOF Test					
822	5% Lilliefors Critical Value					0.0904	Data Not Lognormal at 5% Significance Level					
823	Data Not Lognormal at 5% Significance Level											
824												
825	Background Statistics assuming Lognormal Distribution											
826	95% UTL with 95% Coverage					257.7	90% Percentile (z)					38.94
827	95% UPL (t)					120.7	95% Percentile (z)					112.3
828	95% USL					10313	99% Percentile (z)					818.5
829												
830	Nonparametric Distribution Free Background Statistics											
831	Data do not follow a Discernible Distribution (0.05)											
832												
833	Nonparametric Upper Limits for Background Threshold Values											
834	Order of Statistic, r					94	95% UTL with 95% Coverage					74.9
835	Approximate f					1.649	Confidence Coefficient (CC) achieved by UTL					0.864
836	95% Percentile Bootstrap UTL with 95% Coverage					75.6	95% BCA Bootstrap UTL with 95% Coverage					74.9
837	95% UPL					70.49	90% Percentile					57.65
838	90% Chebyshev UPL					89.71	95% Percentile					64.85
839	95% Chebyshev UPL					123	99% Percentile					80.1
840	95% USL					97.1						
841												
842	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
843	data set free of outliers and consists of observations collected from clean unimpacted locations.											
844	The use of USL tends to provide a balance between false positives and false negatives provided the data											
845	represents a background data set and when many onsite observations need to be compared with the BTV.											
846												
847	Radium 228 T^report_result_value											
848												
849	General Statistics											
850	Total Number of Observations					96	Number of Distinct Observations					83



	A	B	C	D	E	F	G	H	I	J	K	L
851						Number of Missing Observations					128	
852	Minimum					0.263	First Quartile					0.359
853	Second Largest					59.1	Median					0.485
854	Maximum					60.6	Third Quartile					31
855	Mean					13.98	SD					18.57
856	Coefficient of Variation					1.328	Skewness					0.86
857	Mean of logged Data					0.754	SD of logged Data					2.207
858												
859	<b>Critical Values for Background Threshold Values (BTVs)</b>											
860	Tolerance Factor K (For UTL)					1.93	d2max (for USL)					3.196
861												
862	<b>Normal GOF Test</b>											
863	Shapiro Wilk Test Statistic					0.708	<b>Normal GOF Test</b>					
864	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
865	Lilliefors Test Statistic					0.386	<b>Lilliefors GOF Test</b>					
866	5% Lilliefors Critical Value					0.0904	Data Not Normal at 5% Significance Level					
867	<b>Data Not Normal at 5% Significance Level</b>											
868												
869	<b>Background Statistics Assuming Normal Distribution</b>											
870	95% UTL with 95% Coverage					49.83	90% Percentile (z)					37.78
871	95% UPL (t)					44.99	95% Percentile (z)					44.53
872	95% USL					73.34	99% Percentile (z)					57.19
873												
874	<b>Gamma GOF Test</b>											
875	A-D Test Statistic					12.82	<b>Anderson-Darling Gamma GOF Test</b>					
876	5% A-D Critical Value					0.854	Data Not Gamma Distributed at 5% Significance Level					
877	K-S Test Statistic					0.342	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
878	5% K-S Critical Value					0.0984	Data Not Gamma Distributed at 5% Significance Level					
879	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
880												
881	<b>Gamma Statistics</b>											
882	k hat (MLE)					0.356	k star (bias corrected MLE)					0.352
883	Theta hat (MLE)					39.27	Theta star (bias corrected MLE)					39.74
884	nu hat (MLE)					68.36	nu star (bias corrected)					67.56
885	MLE Mean (bias corrected)					13.98	MLE Sd (bias corrected)					23.57
886												
887	<b>Background Statistics Assuming Gamma Distribution</b>											
888	95% Wilson Hilferty (WH) Approx. Gamma UPL					54.8	90% Percentile					40.34
889	95% Hawkins Wixley (HW) Approx. Gamma UPL					58.53	95% Percentile					60.69
890	95% WH Approx. Gamma UTL with 95% Coverage					70.24	99% Percentile					112.6
891	95% HW Approx. Gamma UTL with 95% Coverage					78.52						
892	95% WH USL					187.1	95% HW USL					256.6
893												
894	<b>Lognormal GOF Test</b>											
895	Shapiro Wilk Test Statistic					0.696	<b>Shapiro Wilk Lognormal GOF Test</b>					
896	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
897	Lilliefors Test Statistic					0.292	<b>Lilliefors Lognormal GOF Test</b>					
898	5% Lilliefors Critical Value					0.0904	Data Not Lognormal at 5% Significance Level					
899	<b>Data Not Lognormal at 5% Significance Level</b>											
900												

	A	B	C	D	E	F	G	H	I	J	K	L
901	<b>Background Statistics assuming Lognormal Distribution</b>											
902	95% UTL with 95% Coverage				150.5						90% Percentile (z)	35.99
903	95% UPL (t)				84.76						95% Percentile (z)	80.24
904	95% USL				2460						99% Percentile (z)	361.2
905												
906	<b>Nonparametric Distribution Free Background Statistics</b>											
907	<b>Data do not follow a Discernible Distribution (0.05)</b>											
908												
909	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
910	Order of Statistic, r				94	95% UTL with 95% Coverage					50.1	
911	Approximate f				1.649	Confidence Coefficient (CC) achieved by UTL					0.864	
912	95% Percentile Bootstrap UTL with 95% Coverage				51.98	95% BCA Bootstrap UTL with 95% Coverage					51.98	
913	95% UPL				49.62	90% Percentile					42.35	
914	90% Chebyshev UPL				69.99	95% Percentile					47.8	
915	95% Chebyshev UPL				95.36	99% Percentile					59.18	
916	95% USL				60.6							
917												
918	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
919	data set free of outliers and consists of observations collected from clean unimpacted locations.											
920	The use of USL tends to provide a balance between false positives and false negatives provided the data											
921	represents a background data set and when many onsite observations need to be compared with the BTV.											
922												
923	Radium-226/228 T^report_result_value											
924												
925	<b>General Statistics</b>											
926	Total Number of Observations				12	Number of Distinct Observations					12	
927						Number of Missing Observations					104	
928	Minimum				0.334	First Quartile					0.384	
929	Second Largest				0.507	Median					0.416	
930	Maximum				0.542	Third Quartile					0.494	
931	Mean				0.432	SD					0.0647	
932	Coefficient of Variation				0.15	Skewness					0.336	
933	Mean of logged Data				-0.85	SD of logged Data					0.149	
934												
935	<b>Critical Values for Background Threshold Values (BTVs)</b>											
936	Tolerance Factor K (For UTL)				2.736	d2max (for USL)					2.285	
937												
938	<b>Normal GOF Test</b>											
939	Shapiro Wilk Test Statistic				0.946	<b>Shapiro Wilk GOF Test</b>						
940	5% Shapiro Wilk Critical Value				0.859	Data appear Normal at 5% Significance Level						
941	Lilliefors Test Statistic				0.162	<b>Lilliefors GOF Test</b>						
942	5% Lilliefors Critical Value				0.256	Data appear Normal at 5% Significance Level						
943	<b>Data appear Normal at 5% Significance Level</b>											
944												
945	<b>Background Statistics Assuming Normal Distribution</b>											
946	95% UTL with 95% Coverage				0.609	90% Percentile (z)					0.514	
947	95% UPL (t)				0.552	95% Percentile (z)					0.538	
948	95% USL				0.579	99% Percentile (z)					0.582	
949												
950	<b>Gamma GOF Test</b>											

	A	B	C	D	E	F	G	H	I	J	K	L
951	A-D Test Statistic					0.336	<b>Anderson-Darling Gamma GOF Test</b>					
952	5% A-D Critical Value					0.73	Detected data appear Gamma Distributed at 5% Significance Level					
953	K-S Test Statistic					0.175	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
954	5% K-S Critical Value					0.245	Detected data appear Gamma Distributed at 5% Significance Level					
955	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>											
956												
957	<b>Gamma Statistics</b>											
958	k hat (MLE)					49.18	k star (bias corrected MLE)					36.94
959	Theta hat (MLE)					0.00878	Theta star (bias corrected MLE)					0.0117
960	nu hat (MLE)					1180	nu star (bias corrected)					886.5
961	MLE Mean (bias corrected)					0.432	MLE Sd (bias corrected)					0.071
962												
963	<b>Background Statistics Assuming Gamma Distribution</b>											
964	95% Wilson Hilferty (WH) Approx. Gamma UPL					0.56	90% Percentile					0.525
965	95% Hawkins Wixley (HW) Approx. Gamma UPL					0.561	95% Percentile					0.555
966	95% WH Approx. Gamma UTL with 95% Coverage					0.629	99% Percentile					0.614
967	95% HW Approx. Gamma UTL with 95% Coverage					0.632						
968	95% WH USL					0.592	95% HW USL					0.594
969												
970	<b>Lognormal GOF Test</b>											
971	Shapiro Wilk Test Statistic					0.956	<b>Shapiro Wilk Lognormal GOF Test</b>					
972	5% Shapiro Wilk Critical Value					0.859	Data appear Lognormal at 5% Significance Level					
973	Lilliefors Test Statistic					0.165	<b>Lilliefors Lognormal GOF Test</b>					
974	5% Lilliefors Critical Value					0.256	Data appear Lognormal at 5% Significance Level					
975	<b>Data appear Lognormal at 5% Significance Level</b>											
976												
977	<b>Background Statistics assuming Lognormal Distribution</b>											
978	95% UTL with 95% Coverage					0.642	90% Percentile (z)					0.517
979	95% UPL (t)					0.564	95% Percentile (z)					0.546
980	95% USL					0.6	99% Percentile (z)					0.604
981												
982	<b>Nonparametric Distribution Free Background Statistics</b>											
983	<b>Data appear Normal at 5% Significance Level</b>											
984												
985	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
986	Order of Statistic, r					12	95% UTL with 95% Coverage					0.542
987	Approximate f					0.632	Confidence Coefficient (CC) achieved by UTL					0.46
988	95% Percentile Bootstrap UTL with 95% Coverage					0.542	95% BCA Bootstrap UTL with 95% Coverage					0.542
989	95% UPL					0.542	90% Percentile					0.506
990	90% Chebyshev UPL					0.634	95% Percentile					0.523
991	95% Chebyshev UPL					0.725	99% Percentile					0.538
992	95% USL					0.542						
993												
994	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
995	data set free of outliers and consists of observations collected from clean unimpacted locations.											
996	The use of USL tends to provide a balance between false positives and false negatives provided the data											
997	represents a background data set and when many onsite observations need to be compared with the BTV.											
998												
999	[Selenium]T^report_result_value											
1000												

	A	B	C	D	E	F	G	H	I	J	K	L
1001	<b>General Statistics</b>											
1002	Total Number of Observations					94	Number of Distinct Observations					8
1003							Number of Missing Observations					130
1004	Minimum					1	First Quartile					1
1005	Second Largest					1.7	Median					1
1006	Maximum					1.9	Third Quartile					1
1007	Mean					1.036	SD					0.138
1008	Coefficient of Variation					0.133	Skewness					4.612
1009	Mean of logged Data					0.0291	SD of logged Data					0.106
1010												
1011	<b>Critical Values for Background Threshold Values (BTVs)</b>											
1012	Tolerance Factor K (For UTL)					1.933	d2max (for USL)					3.188
1013												
1014	<b>Normal GOF Test</b>											
1015	Shapiro Wilk Test Statistic					0.311	<b>Normal GOF Test</b>					
1016	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
1017	Lilliefors Test Statistic					0.507	<b>Lilliefors GOF Test</b>					
1018	5% Lilliefors Critical Value					0.0914	Data Not Normal at 5% Significance Level					
1019	<b>Data Not Normal at 5% Significance Level</b>											
1020												
1021	<b>Background Statistics Assuming Normal Distribution</b>											
1022	95% UTL with 95% Coverage					1.303	90% Percentile (z)					1.213
1023	95% UPL (t)					1.267	95% Percentile (z)					1.264
1024	95% USL					1.477	99% Percentile (z)					1.358
1025												
1026	<b>Gamma GOF Test</b>											
1027	A-D Test Statistic					28.91	<b>Anderson-Darling Gamma GOF Test</b>					
1028	5% A-D Critical Value					0.75	Data Not Gamma Distributed at 5% Significance Level					
1029	K-S Test Statistic					0.512	<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
1030	5% K-S Critical Value					0.092	Data Not Gamma Distributed at 5% Significance Level					
1031	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
1032												
1033	<b>Gamma Statistics</b>											
1034	k hat (MLE)					77.48	k star (bias corrected MLE)					75.02
1035	Theta hat (MLE)					0.0134	Theta star (bias corrected MLE)					0.0138
1036	nu hat (MLE)					14566	nu star (bias corrected)					14103
1037	MLE Mean (bias corrected)					1.036	MLE Sd (bias corrected)					0.12
1038												
1039	<b>Background Statistics Assuming Gamma Distribution</b>											
1040	95% Wilson Hilferty (WH) Approx. Gamma UPL					1.241	90% Percentile					1.192
1041	95% Hawkins Wixley (HW) Approx. Gamma UPL					1.238	95% Percentile					1.24
1042	95% WH Approx. Gamma UTL with 95% Coverage					1.276	99% Percentile					1.335
1043	95% HW Approx. Gamma UTL with 95% Coverage					1.273						
1044	95% WH USL					1.454	95% HW USL					1.452
1045												
1046	<b>Lognormal GOF Test</b>											
1047	Shapiro Wilk Test Statistic					0.324	<b>Shapiro Wilk Lognormal GOF Test</b>					
1048	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					
1049	Lilliefors Test Statistic					0.512	<b>Lilliefors Lognormal GOF Test</b>					
1050	5% Lilliefors Critical Value					0.0914	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
1051	<b>Data Not Lognormal at 5% Significance Level</b>											
1052												
1053	<b>Background Statistics assuming Lognormal Distribution</b>											
1054	95% UTL with 95% Coverage				1.264					90% Percentile (z)		1.179
1055	95% UPL (t)				1.229					95% Percentile (z)		1.226
1056	95% USL				1.444					99% Percentile (z)		1.317
1057												
1058	<b>Nonparametric Distribution Free Background Statistics</b>											
1059	<b>Data do not follow a Discernible Distribution (0.05)</b>											
1060												
1061	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
1062	Order of Statistic, r			92					95% UTL with 95% Coverage		1.5	
1063	Approximate f			1.614					Confidence Coefficient (CC) achieved by UTL		0.855	
1064	95% Percentile Bootstrap UTL with 95% Coverage				1.5	95% BCA Bootstrap UTL with 95% Coverage				1.5		
1065	95% UPL				1.325					90% Percentile		1
1066	90% Chebyshev UPL				1.453					95% Percentile		1.235
1067	95% Chebyshev UPL				1.642					99% Percentile		1.714
1068	95% USL				1.9							
1069												
1070	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
1071	data set free of outliers and consists of observations collected from clean unimpacted locations.											
1072	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1073	represents a background data set and when many onsite observations need to be compared with the BTV.											
1074												
1075	Sulfate as SO4 T^report_result_value											
1076												
1077	<b>General Statistics</b>											
1078	Total Number of Observations			105					Number of Distinct Observations		82	
1079									Number of Missing Observations		125	
1080	Minimum			3500					First Quartile		28100	
1081	Second Largest			52800					Median		30400	
1082	Maximum			53000					Third Quartile		33800	
1083	Mean			32204					SD		8134	
1084	Coefficient of Variation			0.253					Skewness		0.168	
1085	Mean of logged Data			10.34					SD of logged Data		0.355	
1086												
1087	<b>Critical Values for Background Threshold Values (BTVs)</b>											
1088	Tolerance Factor K (For UTL)			1.916					d2max (for USL)		3.226	
1089												
1090	<b>Normal GOF Test</b>											
1091	Shapiro Wilk Test Statistic			0.872					<b>Normal GOF Test</b>			
1092	5% Shapiro Wilk P Value			4.431E-13					Data Not Normal at 5% Significance Level			
1093	Lilliefors Test Statistic			0.184					<b>Lilliefors GOF Test</b>			
1094	5% Lilliefors Critical Value			0.0865					Data Not Normal at 5% Significance Level			
1095	<b>Data Not Normal at 5% Significance Level</b>											
1096												
1097	<b>Background Statistics Assuming Normal Distribution</b>											
1098	95% UTL with 95% Coverage				47789					90% Percentile (z)		42628
1099	95% UPL (t)				45768					95% Percentile (z)		45584
1100	95% USL				58445					99% Percentile (z)		51127

	A	B	C	D	E	F	G	H	I	J	K	L
1101												
1102	<b>Gamma GOF Test</b>											
1103	A-D Test Statistic				5.909		<b>Anderson-Darling Gamma GOF Test</b>					
1104	5% A-D Critical Value				0.752		Data Not Gamma Distributed at 5% Significance Level					
1105	K-S Test Statistic				0.177		<b>Kolmogrov-Smirnoff Gamma GOF Test</b>					
1106	5% K-S Critical Value				0.0881		Data Not Gamma Distributed at 5% Significance Level					
1107	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
1108												
1109	<b>Gamma Statistics</b>											
1110	k hat (MLE)				11.32		k star (bias corrected MLE)				11.01	
1111	Theta hat (MLE)				2844		Theta star (bias corrected MLE)				2926	
1112	nu hat (MLE)				2378		nu star (bias corrected)				2312	
1113	MLE Mean (bias corrected)				32204		MLE Sd (bias corrected)				9707	
1114												
1115	<b>Background Statistics Assuming Gamma Distribution</b>											
1116	95% Wilson Hilferty (WH) Approx. Gamma UPL				49542		90% Percentile				45101	
1117	95% Hawkins Wixley (HW) Approx. Gamma UPL				50608		95% Percentile				49653	
1118	95% WH Approx. Gamma UTL with 95% Coverage				52740		99% Percentile				58967	
1119	95% HW Approx. Gamma UTL with 95% Coverage				54125							
1120	95% WH USL				71893		95% HW USL				75793	
1121												
1122	<b>Lognormal GOF Test</b>											
1123	Shapiro Wilk Test Statistic				0.642		<b>Shapiro Wilk Lognormal GOF Test</b>					
1124	5% Shapiro Wilk P Value				0		Data Not Lognormal at 5% Significance Level					
1125	Lilliefors Test Statistic				0.216		<b>Lilliefors Lognormal GOF Test</b>					
1126	5% Lilliefors Critical Value				0.0865		Data Not Lognormal at 5% Significance Level					
1127	<b>Data Not Lognormal at 5% Significance Level</b>											
1128												
1129	<b>Background Statistics assuming Lognormal Distribution</b>											
1130	95% UTL with 95% Coverage				60820		90% Percentile (z)				48548	
1131	95% UPL (t)				55682		95% Percentile (z)				55235	
1132	95% USL				96862		99% Percentile (z)				70364	
1133												
1134	<b>Nonparametric Distribution Free Background Statistics</b>											
1135	<b>Data do not follow a Discernible Distribution (0.05)</b>											
1136												
1137	<b>Nonparametric Upper Limits for Background Threshold Values</b>											
1138	Order of Statistic, r				103		95% UTL with 95% Coverage				49300	
1139	Approximate f				1.807		Confidence Coefficient (CC) achieved by UTL				0.901	
1140	95% Percentile Bootstrap UTL with 95% Coverage				49220		95% BCA Bootstrap UTL with 95% Coverage				49220	
1141	95% UPL				47840		90% Percentile				46160	
1142	90% Chebyshev UPL				56722		95% Percentile				47640	
1143	95% Chebyshev UPL				67828		99% Percentile				52660	
1144	95% USL				53000							
1145												
1146	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background											
1147	data set free of outliers and consists of observations collected from clean unimpacted locations.											
1148	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1149	represents a background data set and when many onsite observations need to be compared with the BTV.											
1150												

	A	B	C	D	E	F	G	H	I	J	K	L	
1151	Thallium T^report_result_value												
1152													
1153	<b>General Statistics</b>												
1154	Total Number of Observations				96		Number of Distinct Observations				1		
1155									Number of Missing Observations				128
1156	Minimum				0.2		First Quartile				0.2		
1157	Second Largest				0.2		Median				0.2		
1158	Maximum				0.2		Third Quartile				0.2		
1159	Mean				0.2		SD				3.906E-16		
1160	Coefficient of Variation				1.953E-15		Skewness				1.016		
1161													
1162	<b>Warning: There is only one distinct observation value in this data set - resulting in '0' variance!</b>												
1163	<b>ProUCL (or any other software) should not be used on such a data set!</b>												
1164	<b>The data set for variable  Thallium T^report_result_value was not processed!</b>												
1165													
1166	<b>If possible, compute and collect Data Quality Objectives (DQOs) based sample size and analytical results.</b>												
1167	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>												
1168													
1169													
1170	Total Dissolved Solids T^report_result_value												
1171													
1172	<b>General Statistics</b>												
1173	Total Number of Observations				105		Number of Distinct Observations				75		
1174									Number of Missing Observations				125
1175	Minimum				41000		First Quartile				404000		
1176	Second Largest				556000		Median				425000		
1177	Maximum				614000		Third Quartile				451000		
1178	Mean				412403		SD				96663		
1179	Coefficient of Variation				0.234		Skewness				-2.536		
1180	Mean of logged Data				12.86		SD of logged Data				0.502		
1181													
1182	<b>Critical Values for Background Threshold Values (BTVs)</b>												
1183	Tolerance Factor K (For UTL)				1.916		d2max (for USL)				3.226		
1184													
1185	<b>Normal GOF Test</b>												
1186	Shapiro Wilk Test Statistic				0.707		<b>Normal GOF Test</b>						
1187	5% Shapiro Wilk P Value				0		Data Not Normal at 5% Significance Level						
1188	Lilliefors Test Statistic				0.248		<b>Lilliefors GOF Test</b>						
1189	5% Lilliefors Critical Value				0.0865		Data Not Normal at 5% Significance Level						
1190	<b>Data Not Normal at 5% Significance Level</b>												
1191													
1192	<b>Background Statistics Assuming Normal Distribution</b>												
1193	95% UTL with 95% Coverage				597608		90% Percentile (z)				536281		
1194	95% UPL (t)				573590		95% Percentile (z)				571399		
1195	95% USL				724243		99% Percentile (z)				637274		
1196													
1197	<b>Gamma GOF Test</b>												
1198	A-D Test Statistic				18.34		<b>Anderson-Darling Gamma GOF Test</b>						
1199	5% A-D Critical Value				0.753		Data Not Gamma Distributed at 5% Significance Level						
1200	K-S Test Statistic				0.335		<b>Kolmogrov-Smirnoff Gamma GOF Test</b>						

	A	B	C	D	E	F	G	H	I	J	K	L	
1201	5% K-S Critical Value				0.0882	Data Not Gamma Distributed at 5% Significance Level							
1202	<b>Data Not Gamma Distributed at 5% Significance Level</b>												
1203													
1204	<b>Gamma Statistics</b>												
1205	k hat (MLE)				7.109	k star (bias corrected MLE)				6.912			
1206	Theta hat (MLE)				58010	Theta star (bias corrected MLE)				59661			
1207	nu hat (MLE)				1493	nu star (bias corrected)				1452			
1208	MLE Mean (bias corrected)				412403	MLE Sd (bias corrected)				156858			
1209													
1210	<b>Background Statistics Assuming Gamma Distribution</b>												
1211	95% Wilson Hilferty (WH) Approx. Gamma UPL				696589	90% Percentile				621833			
1212	95% Hawkins Wixley (HW) Approx. Gamma UPL				728771	95% Percentile				699645			
1213	95% WH Approx. Gamma UTL with 95% Coverage				751175	99% Percentile				861744			
1214	95% HW Approx. Gamma UTL with 95% Coverage				792637								
1215	95% WH USL				1086568	95% HW USL				1201440			
1216													
1217	<b>Lognormal GOF Test</b>												
1218	Shapiro Wilk Test Statistic				0.433	<b>Shapiro Wilk Lognormal GOF Test</b>							
1219	5% Shapiro Wilk P Value				0	Data Not Lognormal at 5% Significance Level							
1220	Lilliefors Test Statistic				0.36	<b>Lilliefors Lognormal GOF Test</b>							
1221	5% Lilliefors Critical Value				0.0865	Data Not Lognormal at 5% Significance Level							
1222	<b>Data Not Lognormal at 5% Significance Level</b>												
1223													
1224	<b>Background Statistics assuming Lognormal Distribution</b>												
1225	95% UTL with 95% Coverage				1004254	90% Percentile (z)				730304			
1226	95% UPL (t)				886471	95% Percentile (z)				876439			
1227	95% USL				1938669	99% Percentile (z)				1234016			
1228													
1229	<b>Nonparametric Distribution Free Background Statistics</b>												
1230	<b>Data do not follow a Discernible Distribution (0.05)</b>												
1231													
1232	<b>Nonparametric Upper Limits for Background Threshold Values</b>												
1233	Order of Statistic, r				103	95% UTL with 95% Coverage				538000			
1234	Approximate f				1.807	Confidence Coefficient (CC) achieved by UTL				0.901			
1235	95% Percentile Bootstrap UTL with 95% Coverage				537800	95% BCA Bootstrap UTL with 95% Coverage				537800			
1236	95% UPL				522600	90% Percentile				492000			
1237	90% Chebyshev UPL				703768	95% Percentile				515400			
1238	95% Chebyshev UPL				835747	99% Percentile				555280			
1239	95% USL				614000								
1240													
1241	Note: The use of USL to estimate a BTV is recommended only when the data set represents a background												
1242	data set free of outliers and consists of observations collected from clean unimpacted locations.												
1243	The use of USL tends to provide a balance between false positives and false negatives provided the data												
1244	represents a background data set and when many onsite observations need to be compared with the BTV.												
1245													



	A	B	C	D	E	F	G	H	I	J	K	L
1					<b>Outlier Tests for Selected Uncensored Variables</b>							
2	<b>User Selected Options</b>											
3	Date/Time of Computation			12/4/2017 5:33:53 PM								
4	From File			Complete background.xls								
5	Full Precision			OFF								
6												
7												
8	<b>Rosner's Outlier Test for  Antimony T^report_result_value</b>											
9												
10												
11	Mean			1								
12	Standard Deviation			0								
13												
14												
15												
16												
17	<b>Rosner's Outlier Test for  Arsenic T^report_result_value</b>											
18												
19												
20	Mean			1								
21	Standard Deviation			0								
22												
23												
24												
25												
26	<b>Rosner's Outlier Test for  Barium T^report_result_value</b>											
27												
28												
29	Mean			56.44								
30	Standard Deviation			7.697								
31	Number of data			96								
32	Number of suspected outliers			1								
33												
34				Potential	Obs.	Test	Critical	Critical				
35	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
36	1	56.44	7.656	76	76	2.555	3.368	3.738				
37												
38	For 5% Significance Level, there is no Potential Outlier											
39												
40	For 1% Significance Level, there is no Potential Outlier											
41												
42												
43	<b>Rosner's Outlier Test for  Beryllium T^report_result_value</b>											
44												
45												
46	Mean			0.7								
47	Standard Deviation			1.228E-15								
48												
49												
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	<b>Rosner's Outlier Test for  Boron T^report_result_value</b>											
53												
54												
55	<b>Mean</b>			<b>29.09</b>								
56	<b>Standard Deviation</b>			<b>15.78</b>								
57	<b>Number of data</b>			<b>96</b>								
58	<b>Number of suspected outliers</b>			<b>1</b>								
59												
60				Potential	Obs.	Test	Critical	Critical				
61	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
62	1	29.09	15.69	79	74	3.18	3.368	3.738				
63												
64	For 5% Significance Level, there is no Potential Outlier											
65												
66	For 1% Significance Level, there is no Potential Outlier											
67												
68												
69	<b>Rosner's Outlier Test for  Cadmium T^report_result_value</b>											
70												
71												
72	<b>Mean</b>			<b>0.5</b>								
73	<b>Standard Deviation</b>			<b>0</b>								
74												
75												
76												
77												
78	<b>Rosner's Outlier Test for  Calcium T^report_result_value</b>											
79												
80												
81	<b>Mean</b>			<b>95485</b>								
82	<b>Standard Deviation</b>			<b>16242</b>								
83	<b>Number of data</b>			<b>104</b>								
84	<b>Number of suspected outliers</b>			<b>1</b>								
85												
86				Potential	Obs.	Test	Critical	Critical				
87	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
88	1	95485	16164	10200	13	5.276	3.391	3.761				
89												
90	For 5% Significance Level, there is 1 Potential Outlier											
91	Potential outliers is: 10200											
92												
93	For 1% Significance Level, there is 1 Potential Outlier											
94	Potential outliers is: 10200											
95												
96												
97	<b>Rosner's Outlier Test for  Chloride T^report_result_value</b>											
98												
99												
100	<b>Mean</b>			<b>38855</b>								



	A	B	C	D	E	F	G	H	I	J	K	L
151	Rosner's Outlier Test for  Fluoride T^report_result_value											
152	Rosner's Outlier Test for  Fluoride T^report_result_value											
153												
154												
155	Mean			178.6								
156	Standard Deviation			74.93								
157	Number of data			94								
158	Number of suspected outliers			1								
159												
160				Potential	Obs.	Test	Critical	Critical				
161	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
162	1	178.6	74.53	100	1	1.055	3.362	3.732				
163												
164	For 5% Significance Level, there is no Potential Outlier											
165												
166	For 1% Significance Level, there is no Potential Outlier											
167												
168												
169	Rosner's Outlier Test for  Lead T^report_result_value											
170												
171												
172	Mean			10								
173	Standard Deviation			0								
174												
175												
176												
177												
178	Rosner's Outlier Test for  Lithium T^report_result_value											
179												
180												
181	Mean			30								
182	Standard Deviation			0								
183												
184												
185												
186												
187	Rosner's Outlier Test for  Mercury T^report_result_value											
188												
189												
190	Mean			0.2								
191	Standard Deviation			4.184E-16								
192												
193												
194												
195												
196	Rosner's Outlier Test for  MOLYBDENUM T^report_result_value											
197												
198												
199	Mean			1								
200	Standard Deviation			0								



	A	B	C	D	E	F	G	H	I	J	K	L
251	For 5% Significance Level, there is no Potential Outlier											
252												
253	For 1% Significance Level, there is no Potential Outlier											
254												
255												
256	<b>ixon's Outlier Test for  Radium-226/228 T^report_result_valu</b>											
257												
258	Number of Observations = 12											
259	10% critical value: 0.49											
260	5% critical value: 0.546											
261	1% critical value: 0.642											
262												
263	<b>1. Observation Value 0.542 is a Potential Outlier (Upper Tail)</b>											
264												
265	Test Statistic: 0.262											
266												
267	For 10% significance level, 0.542 is not an outlier.											
268	For 5% significance level, 0.542 is not an outlier.											
269	For 1% significance level, 0.542 is not an outlier.											
270												
271	<b>2. Observation Value 0.334 is a Potential Outlier (Lower Tail)</b>											
272												
273	Test Statistic: 0.272											
274												
275	For 10% significance level, 0.334 is not an outlier.											
276	For 5% significance level, 0.334 is not an outlier.											
277	For 1% significance level, 0.334 is not an outlier.											
278												
279												
280	<b>Rosner's Outlier Test for  Selenium T^report_result_value</b>											
281												
282												
283	<b>Mean</b>			<b>1.036</b>								
284	<b>Standard Deviation</b>			<b>0.138</b>								
285	<b>Number of data</b>			<b>94</b>								
286	<b>Number of suspected outliers</b>			<b>1</b>								
287												
288				Potential	Obs.	Test	Critical	Critical				
289	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
290	1	1.036	0.137	1.9	38	6.283	3.362	3.732				
291												
292	For 5% Significance Level, there is 1 Potential Outlier											
293	Potential outliers is: 1.9											
294												
295	For 1% Significance Level, there is 1 Potential Outlier											
296	Potential outliers is: 1.9											
297												
298												
299	<b>Rosner's Outlier Test for  Sulfate as SO4 T^report_result_value</b>											
300												

