Technical Memo

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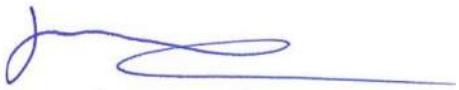
To: **Geoff Strack, SKB Environmental, Inc.**

From: Dave Parenteau, PE (MN), Wenck Associates, Inc.

Date: January 13, 2017

Subject: 2017 Annual Inspection SKB Rosemount Industrial Waste Facility - Report of CCR Landfill Inspection
Wenck Project # B3053-0056

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota.

David M. Parenteau  Jan 13, 2017
PE # 41243

Purpose

This memorandum fulfills the requirements of 40 CFR § 257.84 Inspection Requirements for CCR Surface Landfills, Part b, regarding annual inspection by a qualified professional engineer.

Background and Applicability

SKB Environmental, Inc. owns and operates the SKB Rosemount Industrial Waste Facility, an industrial waste disposal facility operating under MPCA Solid Waste Permit SW-383, originally issued in January of 1992.

The site is located on a 236 acre parcel in Sections 19, 20 and 25 of Township 115 North, Range 18 West, in the city of Rosemount Minnesota, which is in Dakota County. The site is located between Minnesota State Highway 55 and Dakota County Road 38. The attached Figure 1 presents an overview of the site.

There are 6 permitted disposal cells in the Landfill. Past operating records indicate that CCR Material is contained in Cells 1, 2 and 3.

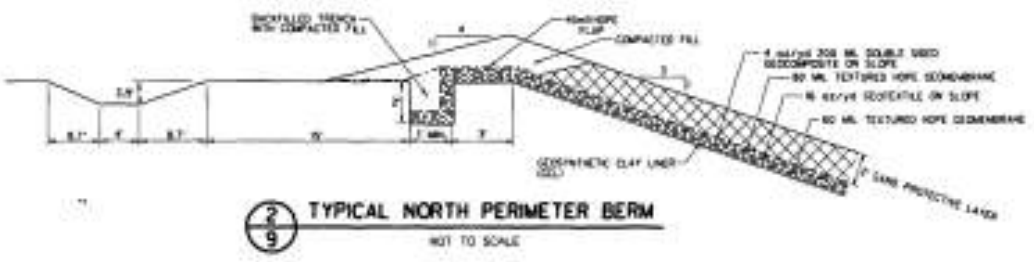
CCR Landfill Inspection (40 CFR § 257.84)

On November 15, 2016, Dave Parenteau conducted the on-site inspection the CCR Landfill. During the inspection the following activities were performed.

- Available information regarding status and condition of the CCR unit, including, but not limited to, files available in the operating record were reviewed. Past inspection reports were reviewed on site, and SKB Environmental, Inc. provided copies of cell construction documentation reports for review in preparing this report. There were no new cells for CCR disposal since the 2016 inspection, therefore no additional construction documentation reports were reviewed for this inspection.

- The documentation reviewed covered the following topics
  - CCR unit design and construction information required by § 257.73(c)(1);
  - Previous periodic structural stability assessments required under § 257.73(d); It should be noted that §257.74 does not apply as the site is not new, nor is it a lateral expansion of an existing impoundment/landfill, therefore this is not addressed.
  - The results of inspections by a qualified person (contained below);
  - Results of previous annual inspections;

  In general, most landfill cell embankments were constructed using granular soils and placed as engineered fill, compacted to 95% of Standard Proctor Dry Density in lift thicknesses ranging from 8 inches to 12 inches. A typical perimeter section, taken from the Cell 3A Construction Documentation Report, prepared by Foth & Van Dyke in October, 2005 is shown below.



- A visual inspection of the CCR units to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

  There were no observed signs of distress or malfunction on the CCR Landfill and their corresponding appurtenant structures.

  Photos taken during the inspection are provided in Attachment 1 and Figure 2 shows where the photos were taken.

CCR Landfill Inspection Report

40 CFR § 257.84, Subpart b.2 requires the following topics in italics be addressed within this report. The requirements are shown in italics with the response immediately afterwards for each item.

(i) *Any changes in geometry of the impounding structure since the previous annual inspection;*

There were no apparent changes from the geometry of the impoundment when compared to the permit drawings or the past construction documentation reports.

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

The approximate volume of CCR material contained in the landfill at the time of the inspection is 510,300 cubic yards.

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

None of the following were observed that could indicate structural weakness;

- Signs of slumping or rotational movement.
- Lateral or vertical distortion of the embankment crest
- Seepage on the outboard slope;
- Burrowing activity of varmints;

(iv) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

There were no changes noted that may could potentially affect the stability or operation of the impoundment. Observations were consistent with those noted in that report.

Notification Requirements

SKB Environmental, Inc. will comply with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g) by the January 18, 2016 deadline.

Conclusions and recommendations

There were no recommendations presented in the 2016 inspection report that needed to be addressed in this 2017 inspection report.

Wenck recommends that the trees rooted in the southern perimeter berms be monitored as part of the 2017 annual inspection. Observations requiring action would be signs of the tops of the trees leaning away from the slope. This leaning can cause concentrated stresses in the slope that, in some cases, can induce slumping of the slope's fill materials. During this inspection there were no signs of this occurring, but it should be part of future routine inspections.

The soils used for embankment construction have been granular in nature, and not subject to consolidation or softening with moisture. The cells are lined with a geomembrane ensuring that there is no leachate seeping through the embankment from the waste material. The landfill embankment crests are wide in width, have slopes no steeper than 3H:1V, and are relatively

short in height, ranging from zero to approximately 20 feet in height. The slopes are well vegetated and the site is well run and maintained.

40 CFR § 257.83, Subpart b.5 and 40 CFR § 257.84, Subpart b.5 each require that if a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

There were no deficiencies or releases identified during the inspection that require remedy as soon as possible.

Attachment 1

Photos

Waste Connections
SKB Rosemount Landfill
2017 Site Inspection Report Photo List

Photo Location	Photo #	Cell	Side of Cell (1)	Slope	View Orientation (1)	Photo Location	Photo #	Phase	Side of Cell (1)	Slope	View Orientation (1)
1	1	3	North	LF Face	West	10	39	2	South	Perim Road/Toe LF	West
1	2	3	North	LF Face	East	10	40	2	South	Perim Road/Toe LF	East
1	3	3	North	Perim Road/Toe LF	East	10	41	2	South	LF Face	East
2	4	3	North	LF Face	West	10	42	2	South	LF Face	West
2	5	3	North	LF Face	East	11	43	2	South	Perim Berm	West
2	6	3	North	Perim Road/Toe LF	East	11	44	2	South	Perim Berm	East
2	7	3	North	Perim Road/Toe LF	West	11	45	2	South	Perim Road/Toe LF	East
3	8	3	North	Perim Road/Toe LF	West	11	46	2	South	Perim Road/Toe LF	West
3	9	3	North	LF Face	West	11	47	2	South	LF Face	East
3	10	3	East	LF Face	South	11	48	2	South	LF Face	West
3	11	3	East	Perim Road/Toe LF	South	12	49	2	South	Perim Berm	West
4	12	3	East	Perim Road/Toe LF	North	12	50	2	South	Perim Berm	East
4	13	3	East	Perim Road/Toe LF	South	12	51	2	South	Perim Road/Toe LF	East
4	14	3	East	LF Face	North	12	52	2	South	Perim Road/Toe LF	West
4	15	3	East	LF Face	South	12	53	2	South	LF Face	East
5	16	3	East	Perim Road/Toe LF	North	12	54	2	South	LF Face	West
5	17	3	East	Perim Road/Toe LF	South	13	55	2	South	LF Face	East
5	18	3	East	LF Face	North	13	56	2	South	Perim Road/Toe LF	East
5	19	3	East	LF Face	South	13	57	2	South	Perim Berm	East
6	20	3	East	Perim Road/Toe LF	North	13	58	2	West	LF Face	North
6	21	3	East	Perim Road/Toe LF	South	13	59	2	West	Perim Road/Toe LF	North
6	22	3	East	LF Face	North	13	60	2	West	Perim Berm	North
6	23	3	East	LF Face	South	14	61	2	West	LF Face	South
7	24	3	East	Perim Road/Toe LF	North	14	62	2	West	Perim Road/Toe LF	South
7	25	2	East	Perim Road/Toe LF	South	14	63	2	West	Perim Berm	South
7	26	3	East	LF Face	North	14	64	2	North	LF Face	East
7	27	2	East	LF Face	South	15	65	2	North	LF Face	West
8	28	2	East	Perim Road/Toe LF	North	16	66	1	East	LF Face	North
8	29	2	East	Perim Road/Toe LF	South	16	67	1	South	LF Face	West
8	30	2	East	LF Face	North	17	68	1/3	Inner	Perim Road/Toe LF	South
8	31	2	East	LF Face	South	17	69	1	East	LF Face	South
9	32	2	East	Perim Road/Toe LF	North	17	70	3	West	LF Face	South
9	33	2	East	LF Face	North	18	71	1	West	LF Face	North
9	34	2	South	Perim Berm	West	18	72	1/2	Inner	Perim Road/Toe LF	East
9	35	2	South	Perim Road/Toe LF	West	18	73	1	West	LF Face	North
9	36	2	South	LF Face	West	19	74	1	West	Perim Road/Toe LF	South
10	37	2	South	Perim Berm	East	19	75	1	West	LF Face	South
10	38	2	South	Perim Berm	West	19	76	1	West	Perim Berm	South

(1) Side of Cell and View Orientation are based on Site North rather than True North

2017 Dike Integrity Inspection Report Photos SKB Rosemount Landfill

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Photo 1 – Cell 3 North Landfill Face

Photo 2 – Cell 3 North Landfill Face

Photo 3 – Cell 3 North Perim Road/Toe of LF Face

Photo 4 – Cell 3 North Landfill Face

Photo 5 – Cell 3 North Landfill Face

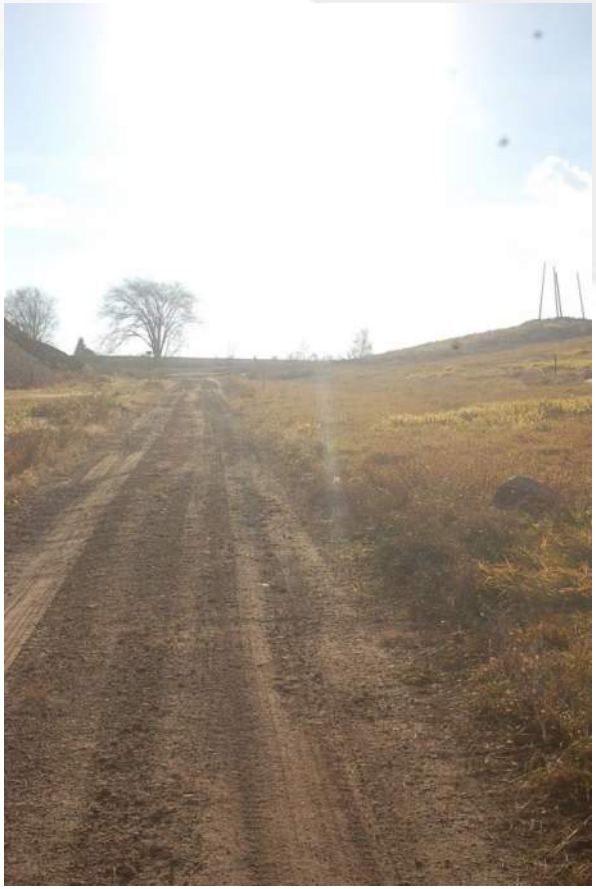

Photo 6 – Cell 3 North Perim Road/Toe of LF Face

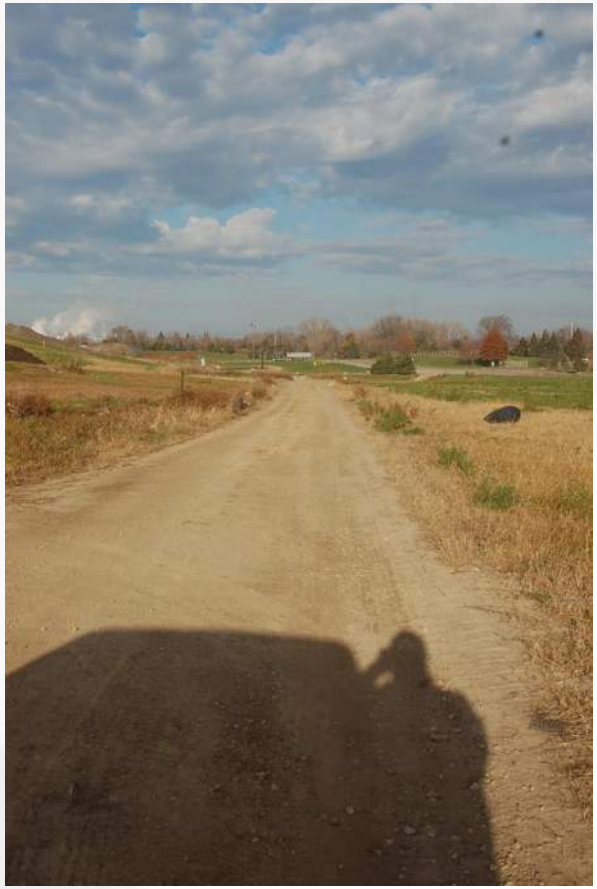

Photo 7 - Cell 3 North Perim Road/Toe of LF Face

Photo 8 - Cell 3 North Perim Road/Toe of LF Face

Photo 9 – Cell 3 North Landfill Face

Photo 10 – Cell 3 East Landfill Face

Photo 11 - Cell 3 East Perim Road/Toe of LF Face

Photo 12 - Cell 3 East Perim Road/Toe of LF Face

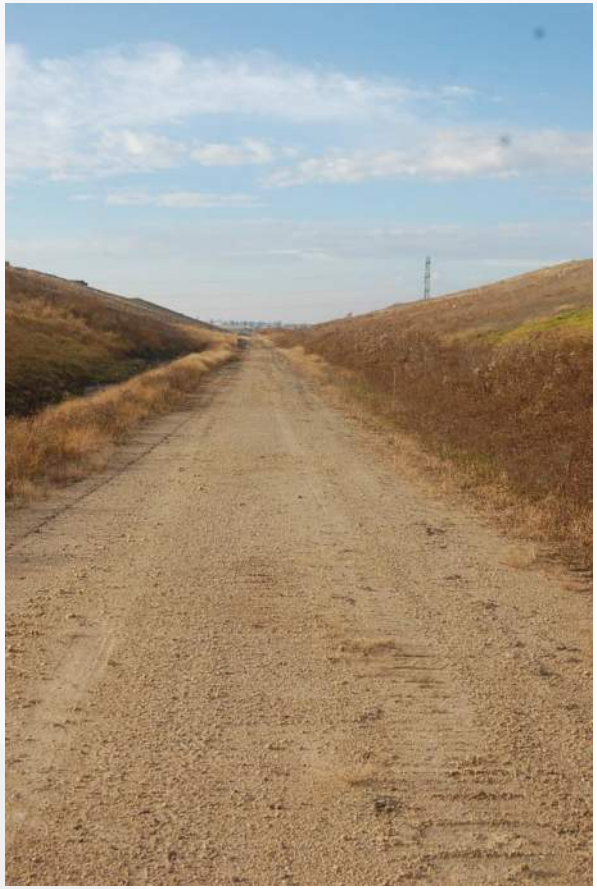

Photo 13 - Cell 3 East Perim Road/Toe of LF Face

Photo 14 - Cell 3 East Landfill Face

Photo 15 - Cell 3 East Landfill Face

Photo 16 - Cell 3 East Perim Road/Toe of LF Face

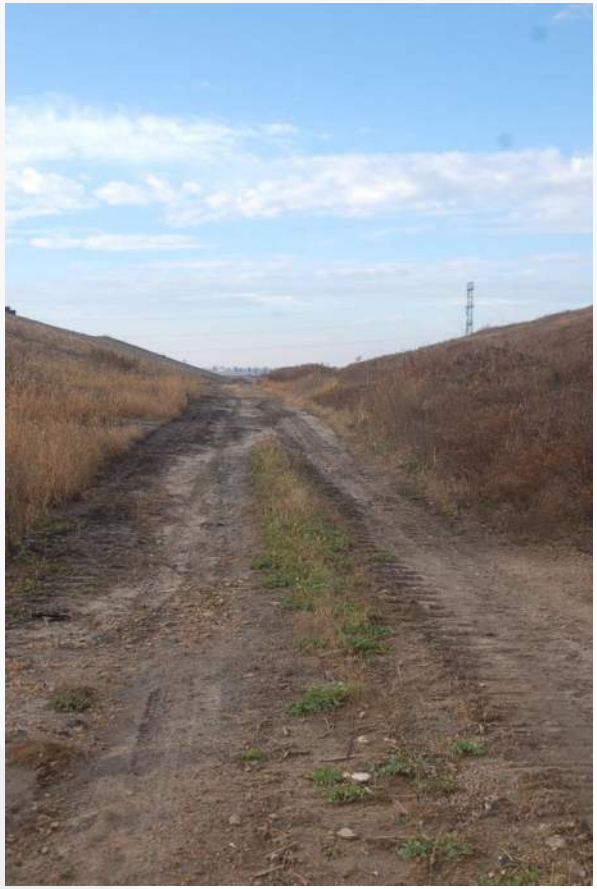

Photo 17 - Cell 3 East Perim Road/Toe of LF Face

Photo 18 - Cell 3 East Landfill Face

Photo 19 - Cell 3 East Landfill Face

Photo 20 – Cell 3 East Perim Road/Toe of LF Face

Photo 21 – Cell 3 East Perim Road/Toe of LF Face

Photo 22 – Cell 3 East Landfill Face

Photo 23 – Cell 3 East Landfill Face

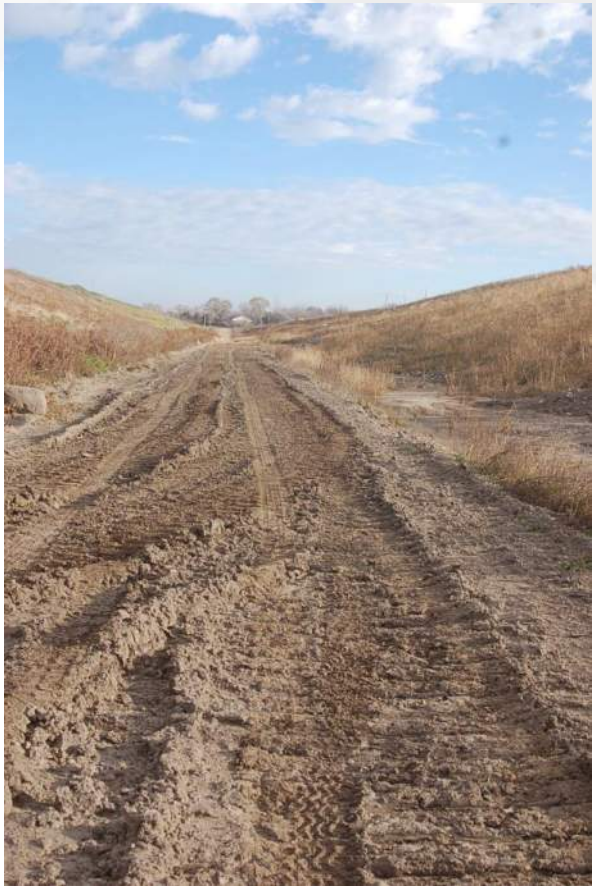

Photo 24 – Cell 3 East Perim Road/Toe of LF Face

Photo 25 – Cell 2 East Perim Road/Toe of LF Face

Photo 26 – Cell 3 East Landfill Face

Photo 27 - Cell 2 East Landfill Face

Photo 28 - Cell 2 East Perim Road/Toe of LF Face

Photo 29 – Cell 2 East Perim Road/Toe of LF Face

Photo 30 – Cell 2 East Landfill Face

Photo 31 - Cell 2 East Landfill Face

Photo 32 - Cell 2 East Perim Road/Toe of LF Face

Photo 33 – Cell 2 East Landfill Face

Photo 34 – Cell 2 South Perimeter Berm

Photo 35 - Cell 2 South Perim Road/Toe of LF Face

Photo 36 - Cell 2 South Landfill Face

Photo 37 – Cell 2 South Perimeter Berm

Photo 38 – Cell 2 South Perimeter Berm

Photo 39 - Cell 2 South Perim Road/Toe of LF Face

Photo 40 - Cell 2 South Perim Road/Toe of LF Face

Photo 41 - Cell 2 South Landfill Face

Photo 42 - Cell 2 South Landfill Face

Photo 43 – Cell 2 South Perimeter Berm

Photo 44 – Cell 2 South Perimeter Berm

Photo 45 - Cell 2 South Perim Road/Toe of LF Face

Photo 46 - Cell 2 South Perim Road/Toe of LF Face

Photo 47 - Cell 2 South Landfill Face

Photo 48 - Cell 2 South Landfill Face

Photo 49 – Cell 2 South Perimeter Berm

Photo 50 – Cell 2 South Perimeter Berm

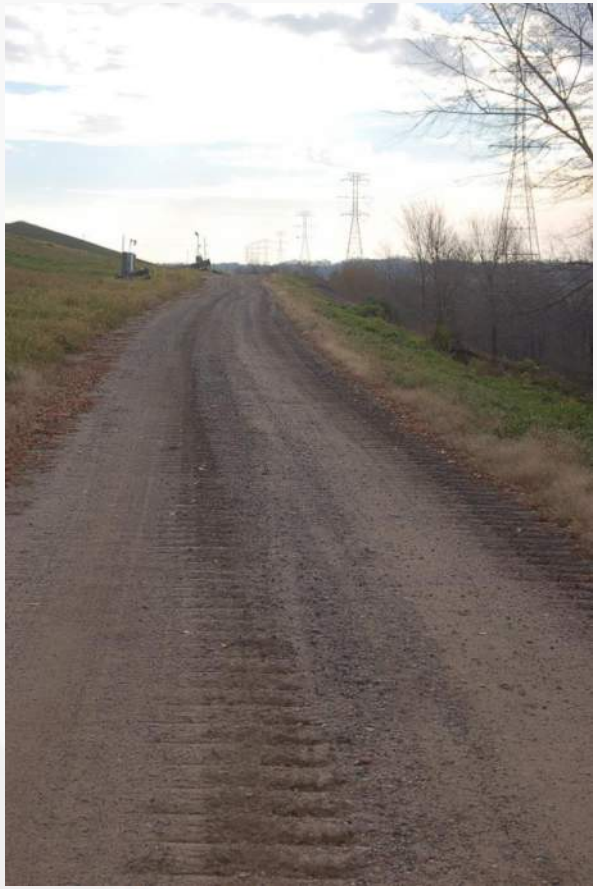

Photo 51 - Cell 2 South Perim Road/Toe of LF Face

Photo 52 - Cell 2 South Perim Road/Toe of LF Face

Photo 53 – Cell 2 South Landfill Face

Photo 54 – Cell 2 South Landfill Face

Photo 55 - Cell 2 South Landfill Face

Photo 56 - Cell 2 South Perim Road/Toe of LF Face

Photo 57 – Cell 2 South Perimeter Berm

Photo 58 – Cell 2 West Landfill Face

Photo 59 - Cell 2 West Perim Road/Toe of LF Face

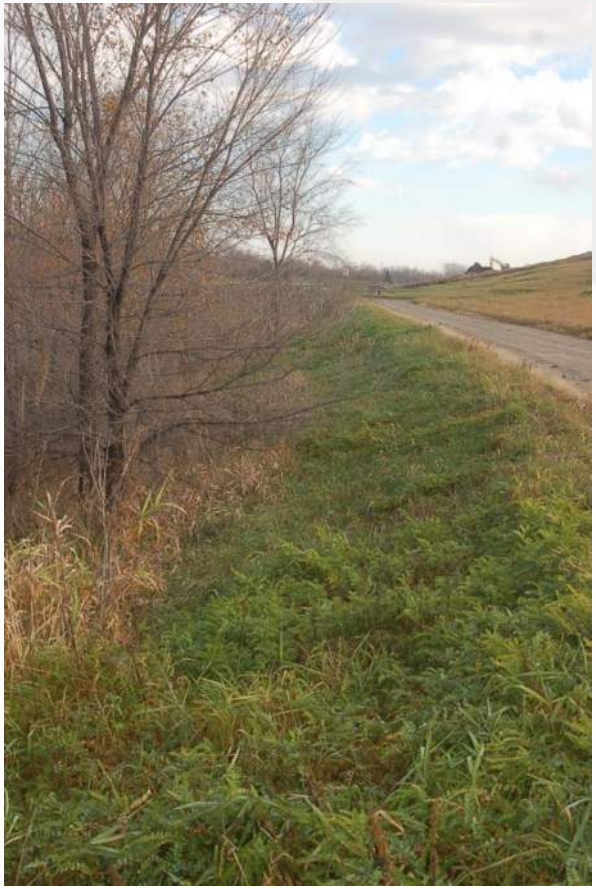

Photo 60 - Cell 2 West Perimeter Berm

Photo 61 - Cell 2 West Landfill Face

Photo 62 - Cell 2 West Perim Road/Toe of LF Face

Photo 63 – Cell 2 West Perimeter Berm

Photo 64 – Cell 2 North Landfill Face

Photo 65 - Cell 2 North Landfill Face

Photo 66 - Cell 1 East Landfill Face

Photo 67 - Cell 1 South Landfill Face

Photo 68 - Cell 1/3 Inner Perim Road/Toe of LF Faces

Photo 69 - Cell 1 East Landfill Face

Photo 70 - Cell 3 West Landfill Face

Photo 71 - Cell 1 West Landfill Face

Photo 72 - Cell 1/2 Inner Perim Road/Toe of LF Faces

Photo 73 - Cell 1 West Landfill Face

Photo 74 - Cell 1 West Perim Road/Toe of LF Face

Photo 75 - Cell 1 West Landfill Face

Photo 76 - Cell 1 West Perimeter Berm

Figures

Plot Date & Time: 20 January 2017 10:42 AM

955,000E | 955,500E | 956,000E | 956,500E | 957,000E | 957,500E | 958,000E | 958,500E | 959,000E | 959,500E

23,500N
23,000N
22,500N
22,000N
21,500N
21,000N
20,500N
20,000N

TRUE NORTH

SITE NORTH

0 100 200
GRAPHIC SCALE IN FEET

#	DESCRIPTION	XXX	XXX	XX/XX/XX
REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

SUB CONSULTANT

PRIME CONSULTANT

WENCK ASSOCIATES

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1800 PIONEER CREEK CENTER 763-479-4242
MAPLE PLAIN, MINNESOTA 763-749-4200

PROJECT TITLE
JAN. 2017 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
SITE MAP

DWN BY	CHK'D	APP'D	DWG DATE
JVB	DMP	DMP	DEC. 2016

SCALE AS NOTED

PROJECT NO. 3053-0056

SHEET NO. FIGURE 1

REV NO.

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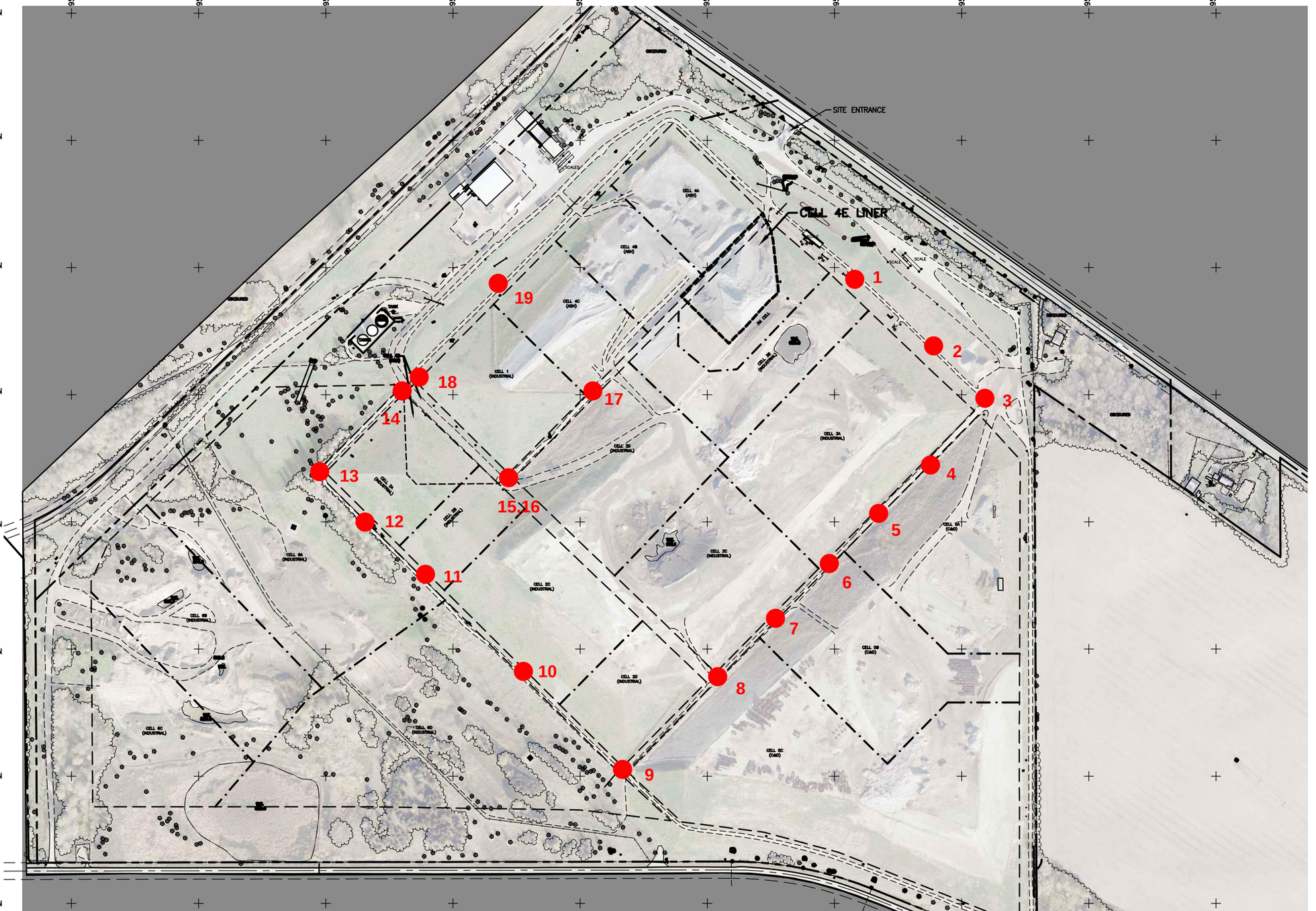

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REV	REVISION DESCRIPTION	DWN	APP	REV DATE

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1800 PIONEER CREEK CENTER
MAPLE PLAIN, MINNESOTA
763-479-4242
763-749-4200

PROJECT TITLE
JAN. 2017 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
PHOTO LOCATIONS

DWN BY	CHK'D	APP'D	DWG DATE	DEC. 2016
JVB	DMP	DMP	SCALE	AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
3052-0056	FIGURE 2	

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Plot Date & Time: 20 January 2017 1:34 PM

955,000E 955,500E 956,000E 956,500E 957,000E 957,500E 958,000E 958,500E 959,000E 959,500E

23,500N
23,000N
22,500N
22,000N
21,500N
21,000N
20,500N
20,000N

SITE ENTRANCE

E LINER

TRUE NORTH

SITE NORTH

0 100 200
GRAPHIC SCALE IN FEET

#	DESCRIPTION	XXX	XXX	XX/XX/XX
REV	REVISION DESCRIPTION	DWN	APP	REV DATE

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MAPLE PLAIN, MINNESOTA 763-749-4200

PROJECT TITLE
JAN. 2017 INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
NOVEMBER 2016 TOPO

DWN BY	CHK'D	APP'D	DWG DATE
JVB	DMP	DMP	DEC. 2016

SCALE AS NOTED

PROJECT NO. 3052-0056

SHEET NO. FIGURE 3

REV NO.

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