

**2017 ANNUAL CCR UNIT INSPECTION REPORT
LUMINANT SANDOW 5 GENERATING PLANT
AX LANDFILL
MILAM COUNTY, TEXAS**

January 10, 2018

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LUMINANT

1.0 INTRODUCTION

Luminant Generation Company, LLC (Luminant) operated the Sandow 5 Generating Plant (Sandow 5) located approximately 7 miles southwest of Rockdale in Milam County, Texas (see Figure 1). Unit No. 5 is an approximately 581-megawatt, lignite-fired electric generation unit that was placed into service in 2009. Coal Combustion Residuals (CCRs) such as fly ash and bed ash are generated as part of Unit No. 5 operation. CCR material is currently managed in the AX Landfill located approximately 7,500 feet south of Unit No. 5.

The CCR Rule (40 CFR 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) has been promulgated by EPA to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. The final CCR Rule was published in the Federal Register on April 17, 2015. The effective date of the CCR Rule was October 19, 2015.

The CCR Rule establishes operating criteria for existing CCR surface impoundments and landfills, including annual inspection requirements for all CCR units to ensure that the design, construction, operation, and maintenance of the CCR units are consistent with recognized and generally accepted good engineering standards. Pastor, Behling & Wheeler, LLC (PBW) was retained by Luminant to perform the 2017 annual inspection of the CCR units at Sandow 5. This report presents the findings of the 2017 annual inspection.

1.1 Sandow 5 Units Subject to Annual CCR Inspection Requirements

The CCR Rule defines coal combustion residuals such as fly ash, bottom/bed ash, boiler slag, flue gas desulfurization (FGD) materials (gypsum), and related solids generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers. The annual inspection requirements of the CCR Rule apply to surface impoundments and landfills that dispose or otherwise engage in solid waste management of CCRs.

No CCR surface impoundments are located at Sandow 5. The AX Landfill is the only CCR unit located at Sandow 5.

The AX Landfill consists of Cells 1, 2 and 2A and covers an area of approximately 148.9 acres (PBW,

2016b). The AX Landfill is located approximately 7,500 feet south of Sandow 5 on reclaimed mine land (Figure 2). A site plan for the AX Landfill is shown on Figure 3. The AX Landfill was registered with the TCEQ as a Class 2 Non-hazardous Waste Landfill in 2008, and the registration was updated in 2015. The landfill is primarily used to manage fly ash and bed ash. Fly ash and bed ash are transported to the landfill in trucks and placed in the landfill as dry material.

AX Landfill Cells 1, 2 and 2A are lined landfill cells. Construction of Cell 1 was completed in July 2013 and construction of Cells 2 and 2A was initiated in May 2015. Cell 2 was completed in October 2015 and Cell 2A was completed in July 2016. Placement of Unit No. 5 CCRs began in Cell 1 in May 2015 and Cell 2 in September 2016. CCRs have not been placed to date in Cell 2A.

The AX Landfill is constructed partially above and partially below grade and are surrounded by engineered earthen embankments that extend approximately 10 to 15 feet above surrounding grade. Smaller interior earthen embankments separate Cells 1, 2 and 2A from each other. A geosynthetic liner system, consisting of a 30-mil thick Geomembrane Supported Geosynthetic Clay Liner (GSGCL) installed on top of 2 feet of soil exhibiting a minimum hydraulic conductivity of 5×10^{-5} cm/sec, has been installed in the landfill cells. The liner system is installed across the bottom of each cell, extends across the interior embankments, and extends up the inside sides of the perimeter embankments. The liner system is covered with an approximately 18-inch thick layer of protective soil to prevent damage to the liner during landfill operations. The base of each landfill cell is sloped toward a collection area for runoff from active landfill areas at the downgradient edge of the cell.

CCRs are placed within the engineered earthen embankments that surround Cells 1, 2 and 2A. CCR levels at the embankment start approximately 2 feet below the top of the embankment and the material will be sloped upward at maximum 4 (Horizontal) to 1 (Vertical) to a maximum anticipated height of 40 feet above the top of the embankment. The material then will slope upward from the top of the 4:1 sloped tier at 3 to 5 percent to an anticipated peak elevation of approximately El. 586 near the center of the landfill.

1.2 Annual CCR Landfill Inspection Requirements

Section 257.84(b) of the CCR Rule specifies that annual inspections be performed for CCR landfills by a qualified professional engineer. The annual CCR landfill inspection must include a review of available information regarding the status and condition of the CCR landfill including files available in the

operating record, such as the results of inspections by the qualified person as required under Section 257.84(a), and the results of previous annual CCR inspections (where applicable) and visual inspection of the CCR landfill to identify signs of distress or malfunction of the landfill. The qualified professional engineer must prepare a report following each inspection that addresses the following:

- Any changes in geometry of the structure since the previous annual inspection;
- The approximate volume of CCRs in the landfill at the time of the inspection;
- 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
- Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

The AX Landfill is classified as an Existing CCR Landfill under the CCR Rule and is therefore subject to the annual inspection requirements of Section 257.84(b). Annual CCR inspections for the AX Landfill were performed in 2015 and 2016 (PBW, 2016a; PBW, 2017).

2.0 RECORDS REVIEW

In accordance with the requirements of 40 CFR Part 257.84(b)(i), Luminant provided PBW with the following information from the facility operating records for the AX Landfill:

- Fugitive Dust Control Plan (FDCP),
- 2016 Sandow 5 Annual Dust Control Report (ADCR),
- Weekly qualified person inspection records,
- Historical CCR unit design and construction documentation, and
- 2016 Annual CCR Inspection Report.

2.1 CCR Fugitive Dust Control Plan

The CCR FDCP for Sandow 5 dated October 2015 and the 2016 Sandow 5 ADCR were reviewed by PBW as part of the annual CCR inspection process. The FDCP was certified by a Registered Professional Engineer on October 5, 2015, and placed into the operating record on October 19, 2015. The Sandow 5 CCR FDCP does include the following dust control measures:

- Water spray or fogging systems;
- Compaction;
- Vegetative cover; and
- Reduced vehicle speeds.

These dust control measures are implemented during transport and placement of CCRs in the landfill. The FDCP includes provisions to amend the plan as necessary, and the plan includes a log for citizen complaints. No citizen complaints were recorded on the 2016 Sandow 5 ADCR.

2.2 Weekly Qualified Person Inspection Records

Weekly inspections of CCR Units by a qualified person are required under Section 257.84(a) of the CCR Rule. Weekly CCR qualified person inspections of the AX landfill were performed throughout 2017. PBW reviewed the weekly qualified person inspection forms for the AX Landfill prepared from November 2016 through October 2017 (the month of the 2017 annual inspection by PBW).

Items identified for monitoring or action at the AX Landfill during the 2017 weekly qualified person inspections can be summarized as follows:

- Monitor small areas of feral hog damage to vegetation on south side of Cell 2;
- Monitor erosion on the east side of the temporary embankment between Cell 2 and Cell 2A;
- Elevated vegetation heights were noted and then addressed through mowing; and
- Minor erosion was observed near the inverts of two culverts near the toe of the exterior embankment on the west side of Cell 1. Additional rip rap stone was placed in this area to supplement the stone placed in this area in October 2016.

The overall status of the AX Landfill was reported as “satisfactory” during all weekly qualified person inspections. No conditions with the potential to result in structural weakness of the landfill embankments or that could potentially disrupt the operation and safety of the landfill were reported.

2.3 CCR Unit Design and Construction Documentation

PBW reviewed the following document that included information concerning the design and construction of the AX Landfill:

- CCR Closure Plan - Sandow 5 Generating Plant - AX Landfill Cells 1, 2 and 2A, Rockdale, Texas (PBW, 2016b)

A description of the design and construction characteristics for the AX Landfill is presented in Section 1.1 of this annual report.

2.4 2016 Annual CCR Inspection Report

PBW reviewed the 2016 Annual CCR Inspection Report for the AX Landfill (PBW, 2017). The recommendations from the 2016 Annual CCR Inspection Report and the status of activities to address the recommendations at the time of the 2017 Annual CCR Inspection can be summarized as follows:

Recommendation from 2016 Annual CCR Inspection	Status at Time of 2017 Annual CCR Inspection
Minor erosion was observed in a small area along the exterior slope of the permanent embankment on the west side of Cell 1. This area should be monitored and repaired as necessary.	Erosion was not observed in this area during the 2017 Annual Inspection. No further action is necessary.
Feral hog damage was observed in a small area on the exterior slope of the permanent embankment on west side of Cell 1. This area should be monitored and repaired as necessary.	The area was observed to be revegetated during the 2017 Annual Inspection. No further action is necessary.

Recommendation from 2016 Annual CCR Inspection	Status at Time of 2017 Annual CCR Inspection
Two areas of limited vegetation were observed on the exterior slopes of the permanent embankment on the south sides of Cells 2 and 2A. These areas should be monitored and repaired as necessary.	The areas of limited vegetation were still present during the 2017 Annual Inspection; however, erosion in these areas appeared to be minimal. These areas should continue to be monitored and revegetated as necessary.
Areas of minor erosion were observed on the interior slopes of the permanent embankment on the south side of Cell 2 and the temporary embankment between Cells 2 and 2A. These areas should be monitored and repaired as necessary.	<p>The area of minor erosion along the south side of Cell 2 was not observed during the 2017 Annual Inspection. No further action is necessary.</p> <p>Erosion along the temporary embankment between Cells 2 and 2A was observed to be significant during the 2017 Annual Inspection. This area should be repaired; however, it should be noted that there was no evidence to indicate that the integrity of the temporary embankment had been compromised by the erosion.</p>
A small area of significant erosion (liner visible) was observed along the temporary embankment between Cells 1 and 2. This area should be repaired	CCR is being placed in both Cells 1 and 2 and this area had been covered with CCR. No further action is necessary.
Minor erosion was observed in a small area along the exterior slope of the permanent embankment on the north side of Cell 2A. This area should be monitored and repaired as necessary.	Erosion was not observed in this area during the 2017 Annual Inspection. No further action is necessary.
An accumulation of silt was observed partially blocking the inlets to two culverts that cross the haul road on the north side of the AX Landfill, northeast of the access ramp. The silt should be removed from the culvert inlets.	The accumulation of silt in this area has increased to the point that the two culverts are almost completely blocked. The silt should be removed from the culvert inlets.

3.0 CCR LANDFILL FIELD INSPECTION

The 2017 annual inspection of the AX Landfill was performed on October 24, 2017. Patrick J. Behling, PE, a registered professional engineer in the State of Texas, was accompanied by a Luminant qualified person (Terry Richter) during the inspection.

The inspection consisted of a walking visual survey of the embankments, CCR placement areas, and storm water/contract water control in AX Landfill Cells 1, 2 and 2A. Figure 3 summarizes the field observations from the inspection. Photographs of the landfill taken during the annual inspection are included as Appendix A and Figure 4 illustrates the location where the photographs were taken. The following sections present the results of the annual inspection, including specific observations related to the structural elements of the landfill.

The inspection requirements for CCR landfills include a review of the design, construction, operation and maintenance of the landfill to determine if the CCR unit meets generally accepted good engineering practice. The primary objective of the visual inspection of AX Landfill Cell 1 was to identify any evidence of actual or potential structural weakness of the CCR unit, including conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit. Landfill conditions observed during the 2017 inspection were compared to conditions reported from the 2016 inspection to identify changes in geometry of the structure.

3.1 Perimeter Embankments

The embankments surrounding the AX Landfill were generally in very good condition. Consistent with the weekly inspections performed during 2017, no evidence of slope movements or misalignments that have potential to affect the structural integrity of the perimeter embankments around the landfill were noted.

The following areas were noted for repairs/maintenance at the landfill (see Figure 3 for locations):

- Heavy vegetation was observed in areas along the interior face of the permanent embankment on the south side of Cell 2 and the interior face of the temporary embankment on the east side of Cells 1 and 2. It is recommended that the vegetation in these areas be cut/maintained to reduce the potential for liner/embankment damage due to shrub/tree roots.
- A small area of significant erosion (liner visible) was observed along the temporary embankment between Cells 2 and 2A. This area should be repaired.

- An accumulation of silt was observed blocking the inlets to two culverts that cross the haul road on the north side of the AX Landfill, northeast of the access ramp. The silt should be removed from the culvert inlets.

The following areas were noted for future monitoring at the landfill (See Figure 3 for locations):

- Two areas of limited vegetation were observed on the exterior slopes of the permanent embankment on the west side of Cell 1 and south side of Cells 2 and 2A. These areas should be monitored and repaired as necessary.
- Minor erosion was observed in a small area along the interior slope of the permanent embankment on the south side of Cell 2, near the contact water collection area. This area should be monitored and repaired as necessary.
- Feral hog damage was observed in a small area along the permanent embankment along the north side of Cell 1. This area should be monitored and repaired as necessary.

3.2 Active CCR Placement Areas

CCRs (fly ash and bed ash from Unit 5) are being placed in Cells 1 and 2 of the AX Landfill. Placement of CCRs in the AX Landfill began in May 2015. Based on information provided by Luminant, the approximate quantities of CCR placed in the AX Landfill from May 2015 through September 2017 are as follows:

Year	CCR Placed (Tons)
2015	996,199
2016	1,851,860
2017	1,568,548
Total	4,416,607

3.3 Storm Water and Contact Water Controls

The earthen embankments that surround Cells 1, 2 and 2A prevent storm water run-on from areas outside the cells. Contact water from the active areas of the landfill is temporarily contained in the active cells and allowed to evaporate or is sprayed on the active portions of the landfill for dust control. No evidence of problems associated with the storm water and contact water controls at the AX Landfill were observed during the inspection.

3.4 Comparison to 2016 Annual CCR Inspection Findings

The findings of the 2017 Annual CCR Inspection of the AX Landfill compare to the findings/recommendations from the 2016 Annual CCR Inspection Report as follows:

- No changes in geometry of the landfill since the previous annual inspection were observed;
- No other changes which could affect the stability or operation of the landfill since the previous annual inspection were observed; and
- Most of the recommendations presented in the 2016 Annual CCR Inspection Report have been addressed by Luminant; however, additional actions are recommended to address the following 2016 recommendations (See Section 2.4 of this report):

Recommendation from 2016 Annual CCR Inspection	Status at Time of 2017 Annual CCR Inspection
An area of minor erosion were observed on the interior slope of the temporary embankment between Cells 2 and 2A. This area should be monitored and repaired as necessary.	Erosion along the temporary embankment between Cells 2 and 2A was observed to be significant during the 2017 Annual Inspection. This area should be repaired.
An accumulation of silt was observed partially blocking the inlets to two culverts that cross the haul road on the north side of the AX Landfill, northeast of the access ramp. The silt should be removed from the culvert inlets.	The accumulation of silt in this area has increased to the point that the two culverts are almost completely blocked. The silt should be removed from the culvert inlets.

4.0 SUMMARY OF FINDINGS

The findings of the 2017 annual inspection of the AX Landfill are summarized herein. Luminant qualified persons responsible for the weekly inspections accompanied PBW during the annual inspection to ensure that observed conditions did not represent a change in geometry since previous inspection or have the potential to disrupt operation and safety of the CCR unit.

4.1 Visual Observation of Embankment Alignments

Consistent with the previous annual CCR inspection performed on behalf of Luminant, and recently completed weekly inspections, no evidence of slope movements or misalignments that have potential to affect the structural integrity of the landfill were noted.

4.2 Visual Observations of Structural Integrity

No conditions were observed during the 2017 annual inspection that indicate an actual or potential structural weakness of the perimeter embankments surrounding the AX Landfill. In addition, conditions observed during the annual inspection indicate that a disruption or the potential for disruption of the operation and safety of the CCR unit is not currently anticipated. A review of weekly inspections completed to date by Luminant and the completion of the annual inspection suggest that changes that may affect the stability or operation of the landfill have not been observed.

4.3 CCR Unit Volumes at Time of Inspection

CCRs have been placed in Cells 1 and 2 of the AX Landfill and CCRs have not been placed to date in Cell 2A. Since placement of CCRs in the AX Landfill began in May 2015, approximately 4,416,607 tons of CCRs have been placed in the landfill.

5.0 RECOMMENDATIONS

The following recommendations are based on the results of the 2017 annual CCR inspection of the AX Landfill:

- Heavy vegetation was observed in areas along the interior face of the permanent embankment on the south side of Cell 2 and the interior face of the temporary embankment on the east side of Cells 1 and 2. It is recommended that the vegetation in these areas be cut/maintained to reduce the potential for liner/embankment damage due to shrub/tree roots.
- A small area of significant erosion (liner visible) was observed along the temporary embankment between Cells 2 and 2A. This area should be repaired.
- An accumulation of silt was observed blocking the inlets to two culverts that cross the haul road on the north side of the AX Landfill, northeast of the access ramp. The silt should be removed from the culvert inlets.
- Two areas of limited vegetation were observed on the exterior slopes of the permanent embankment on the west side of Cell 1 and south side of Cells 2 and 2A. These areas should be monitored and repaired as necessary.
- Minor erosion was observed in a small area along the interior slope of the permanent embankment on the south side of Cell 2, near the contact water collection area. This area should be monitored and repaired as necessary.
- Feral hog damage was observed in a small area along the permanent embankment along the north side of Cell 1. This area should be monitored and repaired as necessary.
- This annual inspection report should be completed by filing the report in the operating record of Sandow Unit 5 no later than January 18, 2018.
- The 2018 annual inspection of the AX Landfill should be performed in October/November 2018.

6.0 REFERENCES

Luminant, 2015. CCR Fugitive Dust Control Plan – Sandow 5 Generating Plant, October 5.

Pastor, Behling & Wheeler, LLC (PBW), 2017. 2016 Annual CCR Unit Inspection Report – Sandow 5 Generating Plant, January 13.

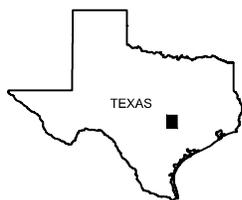
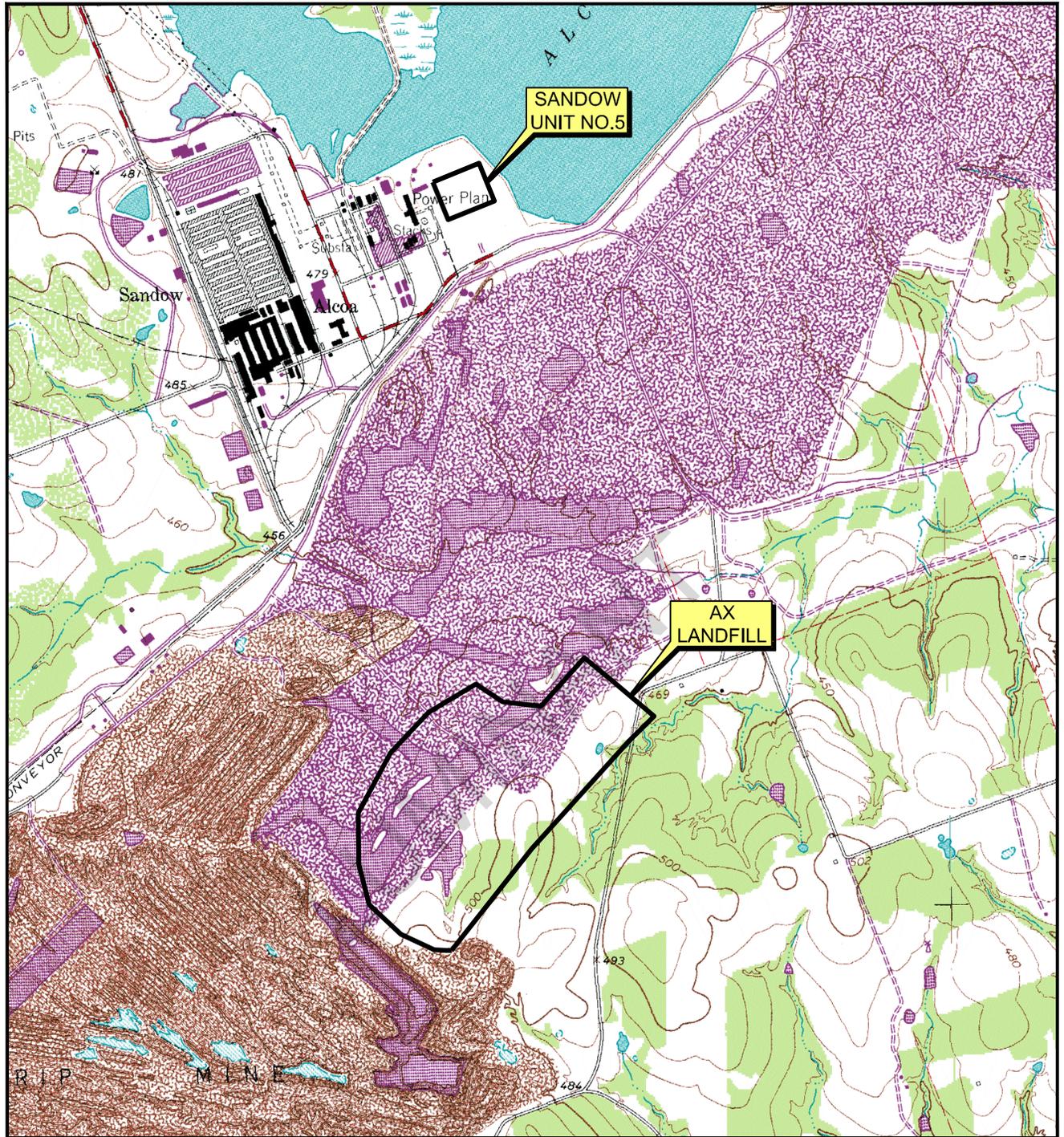
PBW, 2016a. 2015 Annual CCR Unit Inspection Report – Sandow 5 Generating Plant, January 14.

PBW, 2016b. CCR Closure Plan - Sandow 5 Generating Plant - AX Landfill Cells 1, 2 and 2A, Rockdale, Texas. October

LUMINANT

LUMINANT

FIGURES



QUADRANGLE LOCATION



Scale in Feet



LUMINANT GENERATION COMPANY, LLC
SANDOW UNIT NO.5

Figure 1

**AX LANDFILL
LOCATION MAP**

PROJECT: 5313-B

BY: AJD

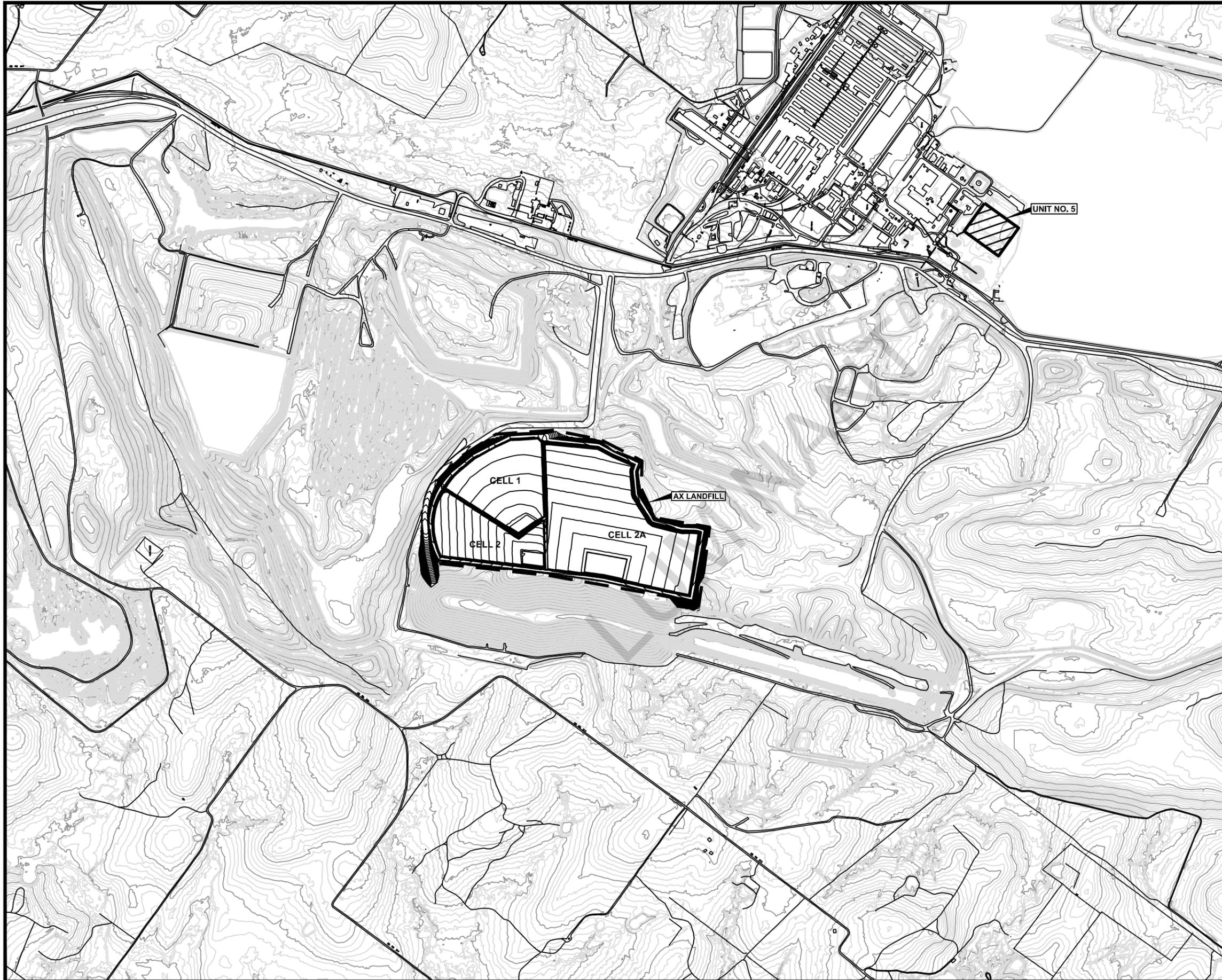
REVISIONS

DATE: DEC., 2017

CHECKED: PJB

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

SOURCE:
Base map from www.tnris.gov, Alcoa Lake, TX 7.5 min. USGS quadrangle dated 1963,
revised 1988.



NOTE:
 EXISTING GRADE CONTOURS OUTSIDE OF CELLS 1, 2
 AND 2A ARE CIRCA 2006 AND ARE SHOWN FOR
 REFERENCE ONLY. CONTOURS DO NOT NECESSARILY
 REFLECT EXISTING CONDITIONS.



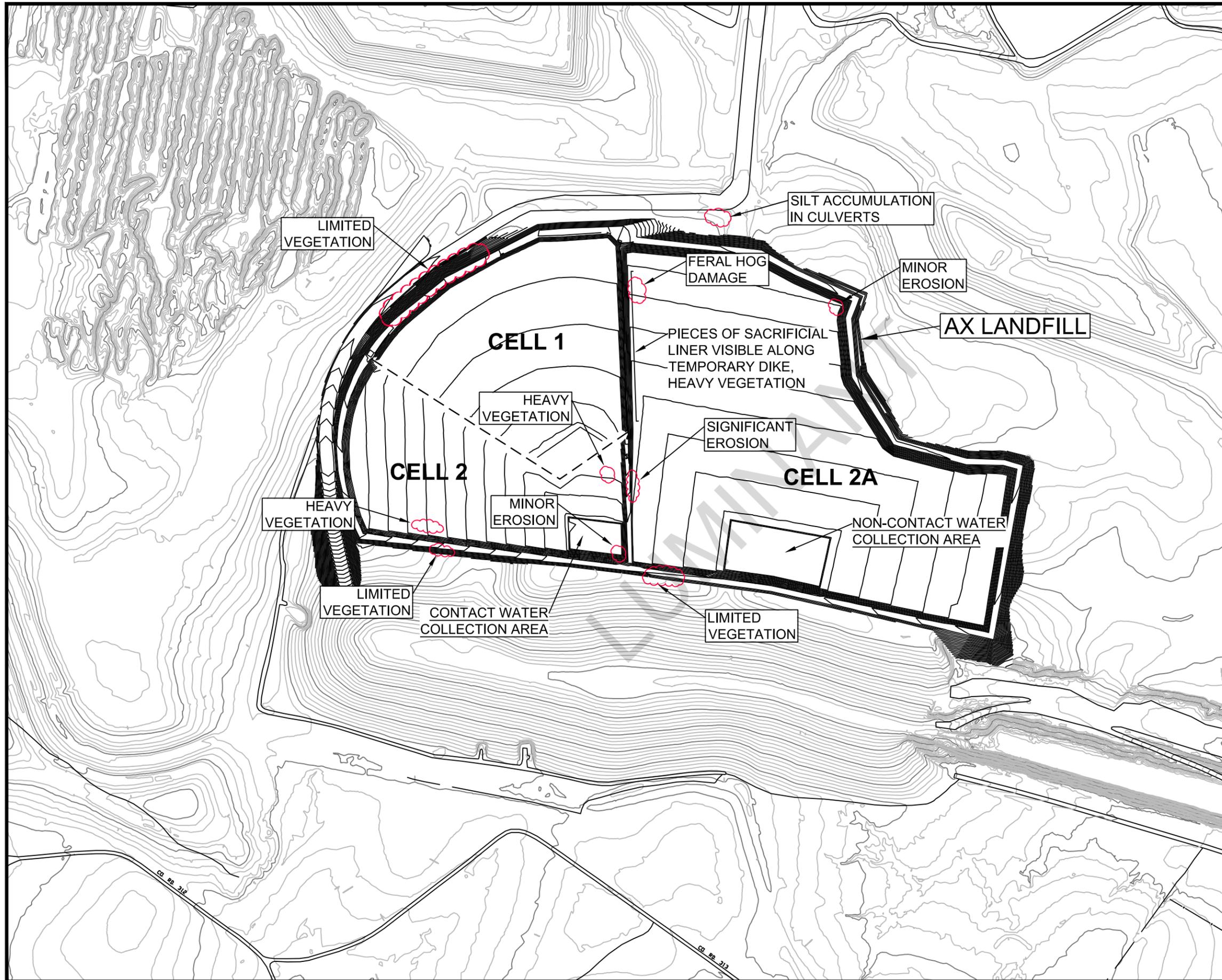
Scale in Feet
 0 750 1500

LUMINANT GENERATION COMPANY, LLC
 SANDOW UNIT NO.5

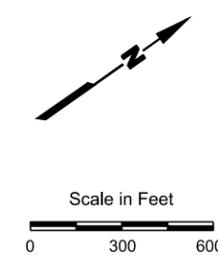
Figure 2
**AX LANDFILL
 SITE VICINITY MAP**

PROJECT: 5313-B	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: PJB	

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NOTE:
EXISTING GRADE CONTOURS OUTSIDE OF CELLS 1, 2 AND 2A ARE CIRCA 2006 AND ARE SHOWN FOR REFERENCE ONLY. CONTOURS DO NOT NECESSARILY REFLECT EXISTING CONDITIONS.

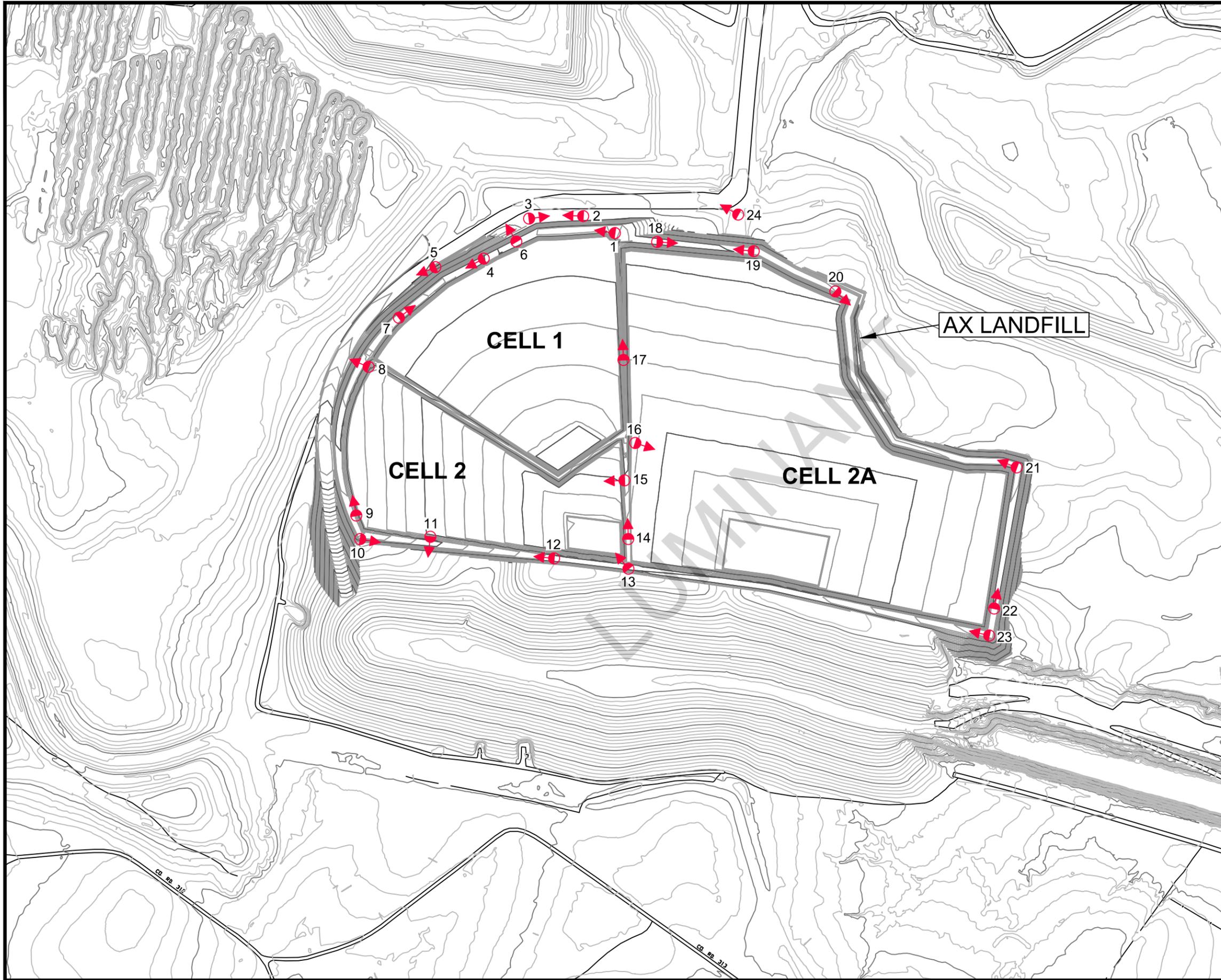


LUMINANT GENERATION COMPANY, LLC
SANDOW UNIT NO.5

Figure 3
ANNUAL INSPECTION FINDINGS SUMMARY MAP AX LANDFILL

PROJECT: 5313-B	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: PJB	

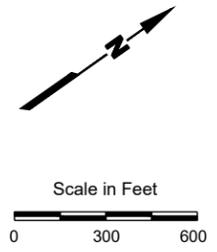
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EXPLANATION

📍➔ Photograph Location and Direction

NOTE:
 EXISTING GRADE CONTOURS OUTSIDE OF CELLS 1, 2 AND 2A ARE CIRCA 2006 AND ARE SHOWN FOR REFERENCE ONLY. CONTOURS DO NOT NECESSARILY REFLECT EXISTING CONDITIONS.



LUMINANT GENERATION COMPANY, LLC
 SANDOW UNIT NO.5

Figure 4
**ANNUAL INSPECTION
 PHOTOGRAPH LOG
 AX LANDFILL**

PROJECT: 5313-B	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: PJB	

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APPENDIX A
PHOTOGRAPHS – AX LANDFILL

LUMINANT



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 1 – (View SW) Top of embankment along north side of Cell 1. Cell 1 to left.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 2 – (View SW) Toe of embankment along north side of Cell 1. Haul road to right.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 3 – (View NE) Toe of embankment along north side of Cell 1. Haul road to left.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 4 – (View S) Top of embankment along west side of Cell 1. Cell 1 to left.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



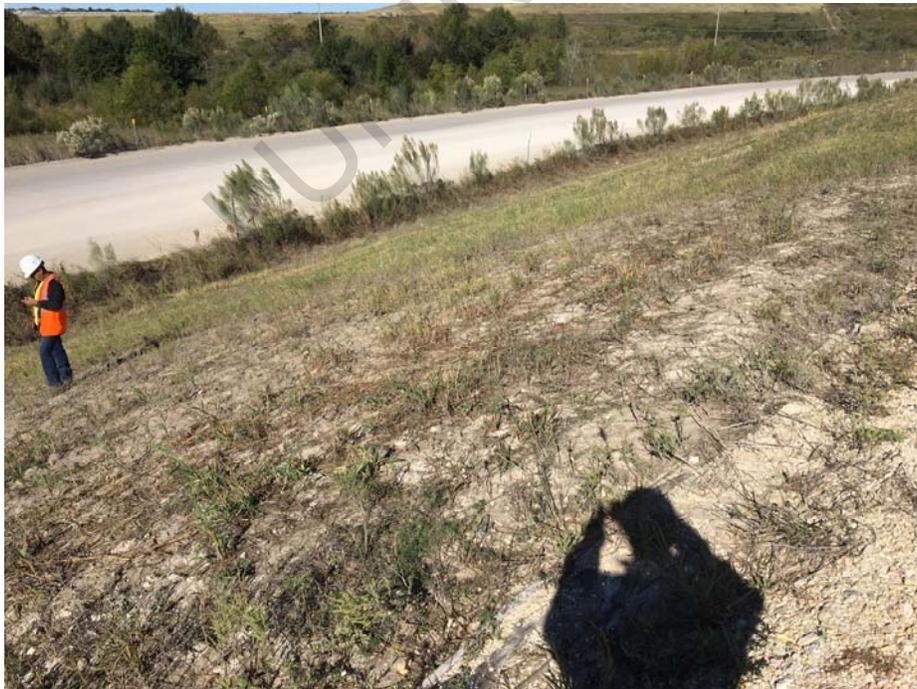
Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 5 – (View S) Toe of embankment along west side of Cell 1. Haul road to right.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 6 – Culverts along west side of Cell 1.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 7 – (View N) Top of embankment along west side of Cell 1. Cell 1 to right.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 8 – Area of limited vegetation along west embankment of Cells 1 and 2.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 9 – (View NW) Top of west embankment at south corner of Cell 2. Cell 2 to right.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 10 – (View NE) Top of embankment along south side of Cell 2. Cell 2 to left.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 11 – Area of limited vegetation along south embankment of Cell 2.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 12 – (View SW) Top of east embankment of Cell 2. Cell 2 to right.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 13 – Contact water collection area in Cell 2.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 14 – (View NW) Temporary embankment between Cell 2 and Cell 2A. Cell 2 to left, Cell 2A to right.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 15 – Erosion and heavy vegetation on face of temporary embankment in Cell 2.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 16 – Significant erosion on face of temporary embankment in Cell 2A.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 17 – (View NW) Heavy vegetation in Cell 1 on face of temporary embankment along east side of Cell 1.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 18 – (View NE) Top of embankment along north side of cell 2A, from NW corner of cell 2A. Cell 2A to right.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 19 – (View SW) Top of embankment on north side of Cell 2A. Cell 2A to left.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler PROJECT NO. 5313B	DESCRIPTION	Photograph 20 – (View NE) Top of embankment on north side of Cell 2A. Cell 2A to right.	
	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 21 – (View W) Top of embankment along north side of Cell 2A, from NE corner of Cell 2A.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 22 – (View NW) Top of embankment along east side of Cell 2A, from SE corner of cell 2A.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 23 – (View SW) Top of embankment along south side of Cell 2A, from SE corner of Cell 2A.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17



Pastor, Behling & Wheeler	DESCRIPTION	Photograph 24 – Significant accumulation of silt in culverts crossing under haul road on north side of landfill.	
PROJECT NO. 5313B	SITE NAME	Sandow Unit No. 5 – AX Landfill Annual Inspection	DATE 10/24/17