



**Bullock, Bennett & Associates, LLC**

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February 12, 2024  
BBA Project No. 23643-01-2024

Mr. Eric Chavers  
Luminant Generation Company LLC  
6555 Sierra Drive.  
Irving, Texas 75309

**RE: Groundwater Monitoring System Certification – Addendum No. 2  
Martin Lake Steam Electric Station – A1 Area Landfill  
Panola County, Texas  
(TCEQ CCR Registration Application No. CCR105)**

**DOCUMENT REVISION RECORD**

<b>Issue No.</b>	<b>Date</b>	<b>Details of Revisions</b>
<b>Revision 0</b>	October 2017	Original Document
<b>Addendum 1</b>	December 2022	Updated site plan to indicate extent of final waste boundary and extent of historical mining near the A1 Area Landfill, updated cross sections to show mine spoil thickness and additional geological information below the spoil zone, revised designation of uppermost groundwater-bearing unit to indicate it is an unconfined unit, and added professional seal to figures where applicable
<b>Addendum 2</b>	February 2024	Provide certification and other relevant information for upgradient well BMW-33

**1.0 INTRODUCTION**

Luminant Generation Company LLC (Luminant) owns and operates the Martin Lake Steam Electric Station (MLSES) located approximately 5 miles southeast of Tatum, Rusk County, Texas (Figure 1). The MLSES consists of three coal-fired power generation units. Coal Combustion Residuals (CCRs) including fly ash, bottom ash and gypsum are generated as part of the MLSES unit operations. Currently, CCRs generated at the MLSES are transported off-site for beneficial reuse by third-parties or are managed by Luminant in surface impoundments located on the MLSES property or at the A1 Area Landfill located approximately 2.5 miles east of the MLSES in Panola County.

The CCR Rule (40 C.F.R. 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) was promulgated by the United States Environmental Protection Agency (USEPA) to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. TCEQ has adopted portions of the federal CCR rule at 30 T.A.C. Chapter 352 (Texas CCR Rule), and USEPA published its final approval of the Texas CCR rule on June 28, 2021.

The A1 Area Landfill CCR groundwater monitoring system was certified by a professional engineer in accordance with 40 C.F.R §257.91 in the 2017 Groundwater Monitoring System Certification report (PBW 2017). This addendum to the original A1 Area Landfill Groundwater Monitoring System Certification provides a professional engineer’s certification and other relevant information associated with upgradient well BMW-33, which was incorporated into the A1 Area Landfill CCR groundwater monitoring system in 2020.

## 2.0 A1 AREA LANDFILL GROUNDWATER MONITORING SYSTEM

The A1 Area Landfill CCR groundwater monitoring system consists of the following twelve monitoring wells:

Upgradient Wells	Downgradient Wells
BMW-11A-R	BMW-18
BMW-33	BMW-19
	BMW-20
	BMW-21
	BMW-22
	BMW-23
	BMW-24
	BMW-26
	BMW-27
	BMW-28

A detailed Site Plan of the A1 Area Landfill showing the CCR monitoring well locations is presented on Figure 2.

The A1 Area Landfill is currently operating under an Assessment Monitoring Program. An Assessment of Corrective Measures (ACM) for Appendix IV parameters identified at statistically significant levels above groundwater protection standards was completed in September 2019 (Golder 2019) pursuant to 40 C.F.R. §257.95(g). Five nature and extent monitoring wells (BMW-29, BMW-30, BMW-31, BMW-32, and BMW-33) were completed at the site in May 2019 as part of the ACM evaluation. As noted in the A1 Area Landfill 2020 Annual Groundwater Monitoring and Corrective Action Report (Golder 2021), upgradient/background monitoring well BMW-33, which was installed and sampled as part of the 2019 ACM evaluation, was incorporated into the CCR monitoring program in 2020.

The monitoring well construction log for BMW-33 is presented in Attachment 1. Monitoring well construction logs for the other CCR groundwater monitoring wells were provided in the 2017

Groundwater Monitoring System Certification (PBW 2017). Groundwater potentiometric surface maps, which show the inferred groundwater flow direction and location of each CCR monitoring well relative to the A1 Area Landfill are presented in Attachment 2. The groundwater potentiometric surface maps indicate that BMW-33 is located hydraulically upgradient of the A1 Area Landfill. A professional engineer’s certification is provided in Section 4.

### 3.0 REFERENCES

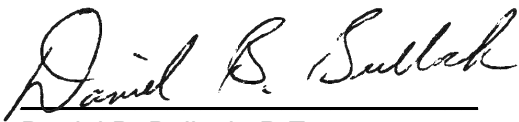
Golder, 2019. CCR Assessment of Corrective Measures, Martin Lake Steam Electric Station – A1 Area Landfill, Panola County, Texas. September.

Golder, 2021. 2020 Annual Groundwater Monitoring and Corrective Action Report, Martin Lake Steam Electric Station A1 Area Landfill - Panola County, Texas. January.

Pastor, Behling & Wheeler, LLC (PBW), 2017. Coal Combustion Residual Rule Groundwater Monitoring System Certification, Martin Lake Steam Electric Station, A1 Area Landfill.

### 4.0 PROFESSIONAL CERTIFICATION

This document and all attachments were prepared by Bullock, Bennett & Associates, LLC under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I hereby certify that Addendum No.2 to the Groundwater Monitoring System Certification for the A1 Area Landfill associated with the Martin Lake Steam Electric Station has been prepared in accordance with the requirements of 40 C.F.R. §257.91 and 30 T.A.C §352.911.



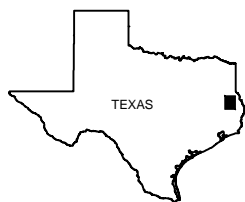
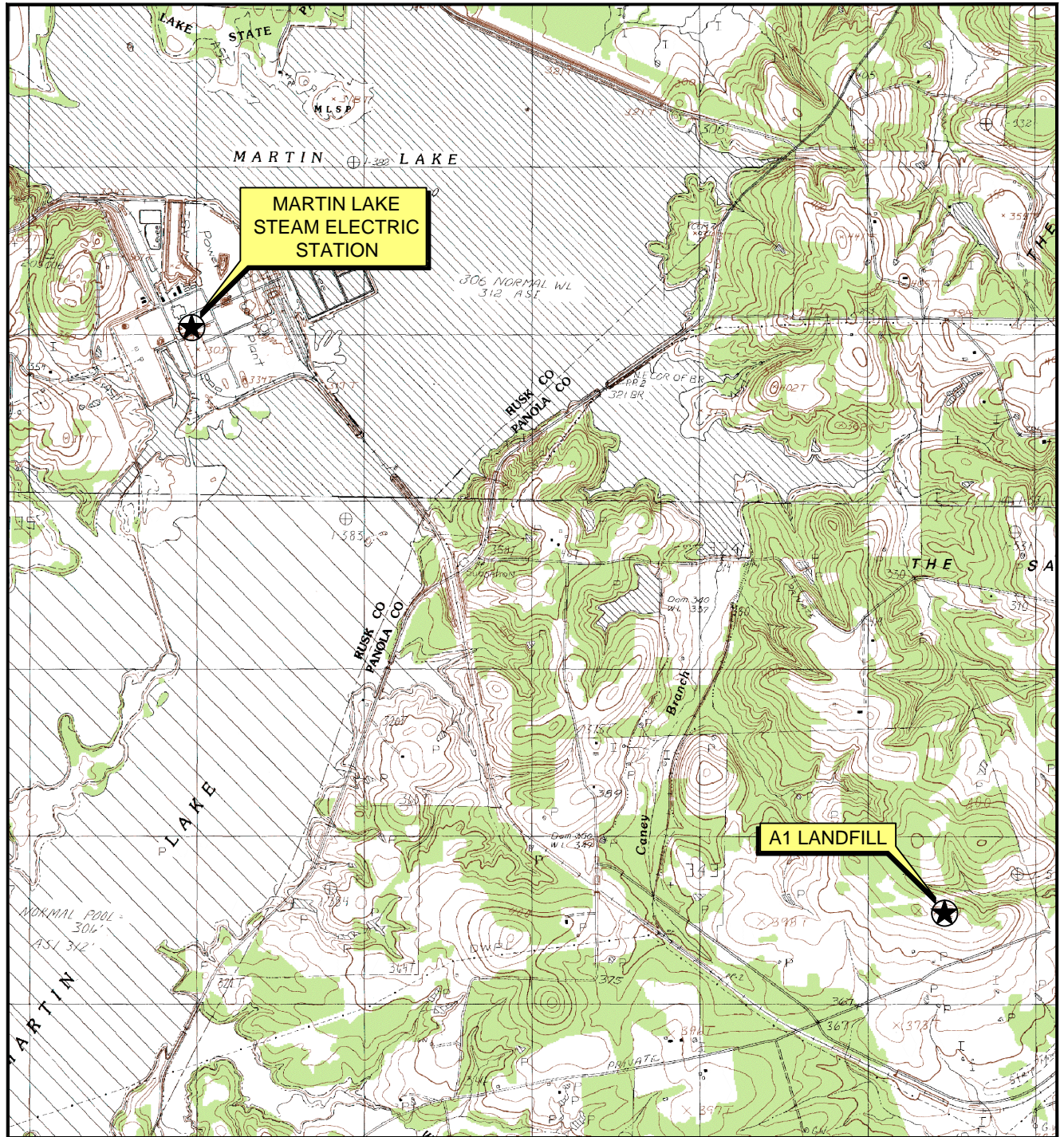
Daniel B. Bullock, P.E.  
Principal Engineer  
Bullock, Bennett & Associates, LLC  
Texas Professional Engineering Firm No. 8542



2/12/2024

## FIGURES

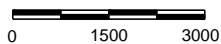
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QUADRANGLE LOCATION



Scale in Feet



**MARTIN LAKE STEAM ELECTRIC STATION  
TATUM, TEXAS**

Figure 1

**A1 AREA LANDFILL  
SITE LOCATION MAP**

PROJECT: 23436-01-2024

BY: WFV

REVISIONS

DATE: Feb. 2024

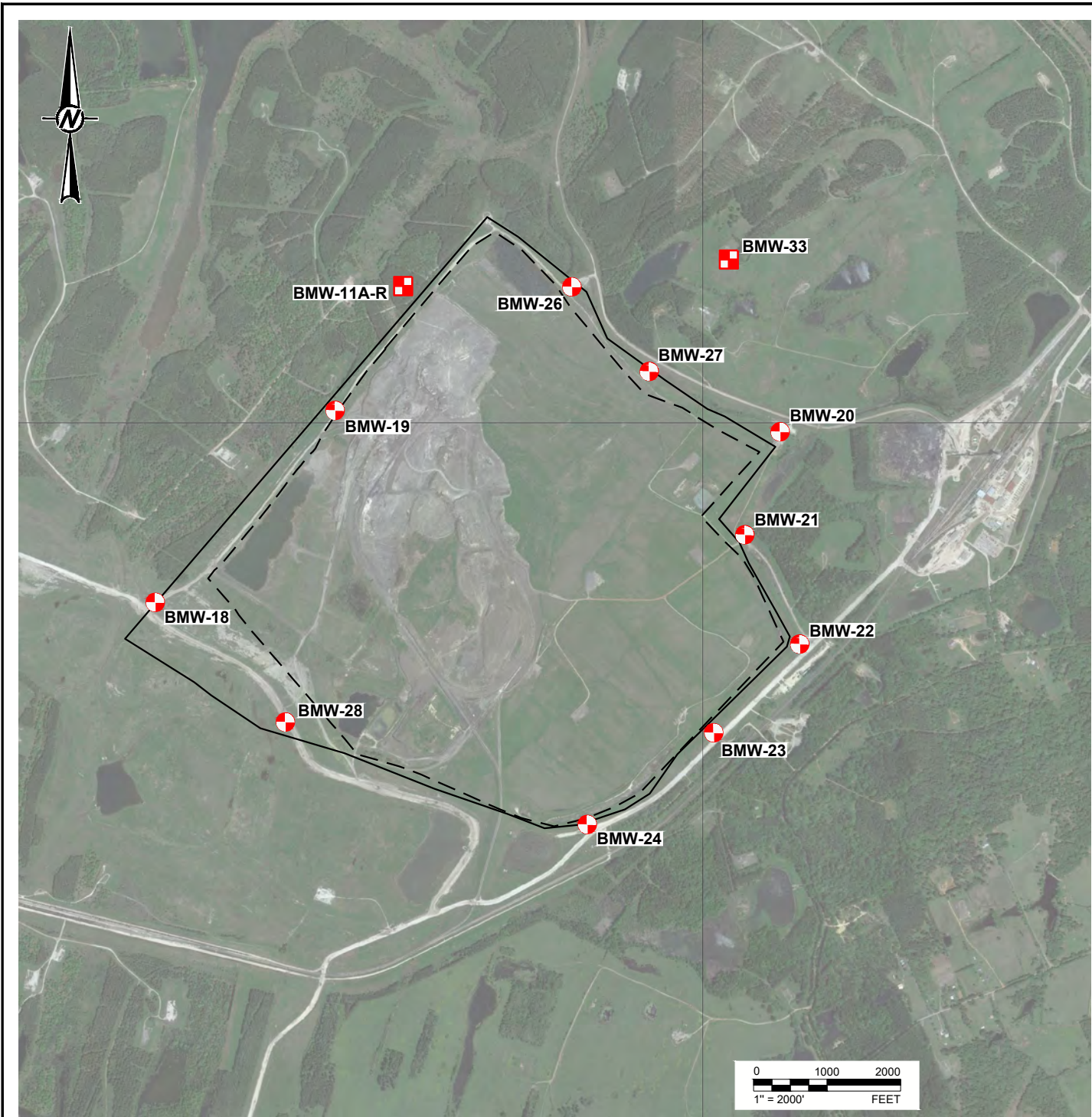
CHECKED: WFV

**Bullock, Bennett & Associates, LLC**  
Engineering and Geoscience

Texas Registrations: Engineering F-8542, Geoscience 50127

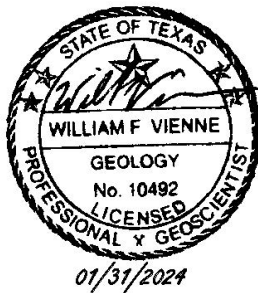
SOURCE:

Base map from www.tnris.gov, Tatum, TX 7.5 min. USGS quadrangle dated 1983.



**LEGEND**

- DEED RESTRICTION BOUNDARY
- - - WASTE BOUNDARY
- DOWNGRADIENT CCR MONITORING WELL
- UPGRADIENT CCR MONITORING WELL



**MARTIN LAKE STEAM ELECTRIC STATION  
TATUM, TEXAS**

Figure 2

**A1 AREA LANDFILL  
CCR GROUNDWATER  
MONITORING SYSTEM**

PROJECT: 23436-01-2024	BY: WFV	REVISIONS
DATE: Feb. 2024	CHECKED: WFV	

Bullock, Bennett & Associates, LLC  
Engineering and Geoscience  
Texas Registrations: Engineering F-8542, Geoscience 50127

**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 4/6/17.

**ATTACHMENT 1**

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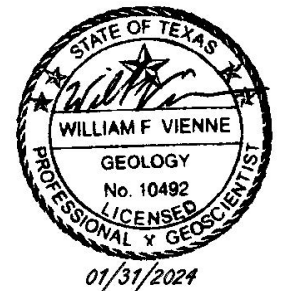
**BMW-33 Monitoring Well Boring Log**

# Luminant

# Log of Boring: BMW-33

Big Brown Steam Electric Station Franklin, Texas	Completion Date:	5/30/2019	Drilling Method:	Sonic
	Drilling Company:	Walker-Hill Environmental	Borehole Diameter (in.):	6
Golder Project No. 19122434E	Driller:	Rodney Labrosse	Total Depth (ft):	48
	Driller's License:	60059	TOC Elevation (ft. AMSL):	427.7
	Logged By:	Sergio Ruiz	Northing:	3568008
	Sampling Method:	4"x10' Core barrel	Easting:	357427.5

Depth (ft)	Well Materials	Recovery (ft/ft)	USCS	Lithologic Description
0				
5		6.2/10.0	SP	(0 - 16.7) SAND, fine grained, wet, soft, subround, no plasticity, mix of orange, light orange, few gray clay lenses, thick clay lense 7.3' to 7.8', saturated at 11', trace organics in top 1'
10				
15		6.4/10.0	CH	(16.7 - 18.4) CLAY, dark gray, moist, very firm, high plasticity
20				
25		7.3/10.0		
30			SC	(18.4 - 48.9) Clayey SAND, wet below 20', mix of gray, light gray, and tan, soft to firm, large pieces of lignite 18.5' to 20' and mixed throughout, dark gray fat clay lense 27.7'-28.2', mixed clay nodules below 29', saturated at 38',
35		6.1/10.0		
40				
45		6.9/9.0		
50				(48.9 - 49) CLAY, gray stiff, with some sand throughout, some black lignite pieces




**GOLDER**  
2201 Double Creek Dr., Suite 4004  
Round Rock, Texas 78664  
O-512.671.3434 F-512.671.3446

**Notes:**

1. This log should not be used separately from the report to which it is attached.
2. Entire core is composed of mine spoil.

**Well Materials**

(+3 - 38) Casing, 2" Sch 40 FJT PVC  
(38 - 48) Screen, 2" Sch 40 FJT PVC, 0.010" slot

**Annular Materials**

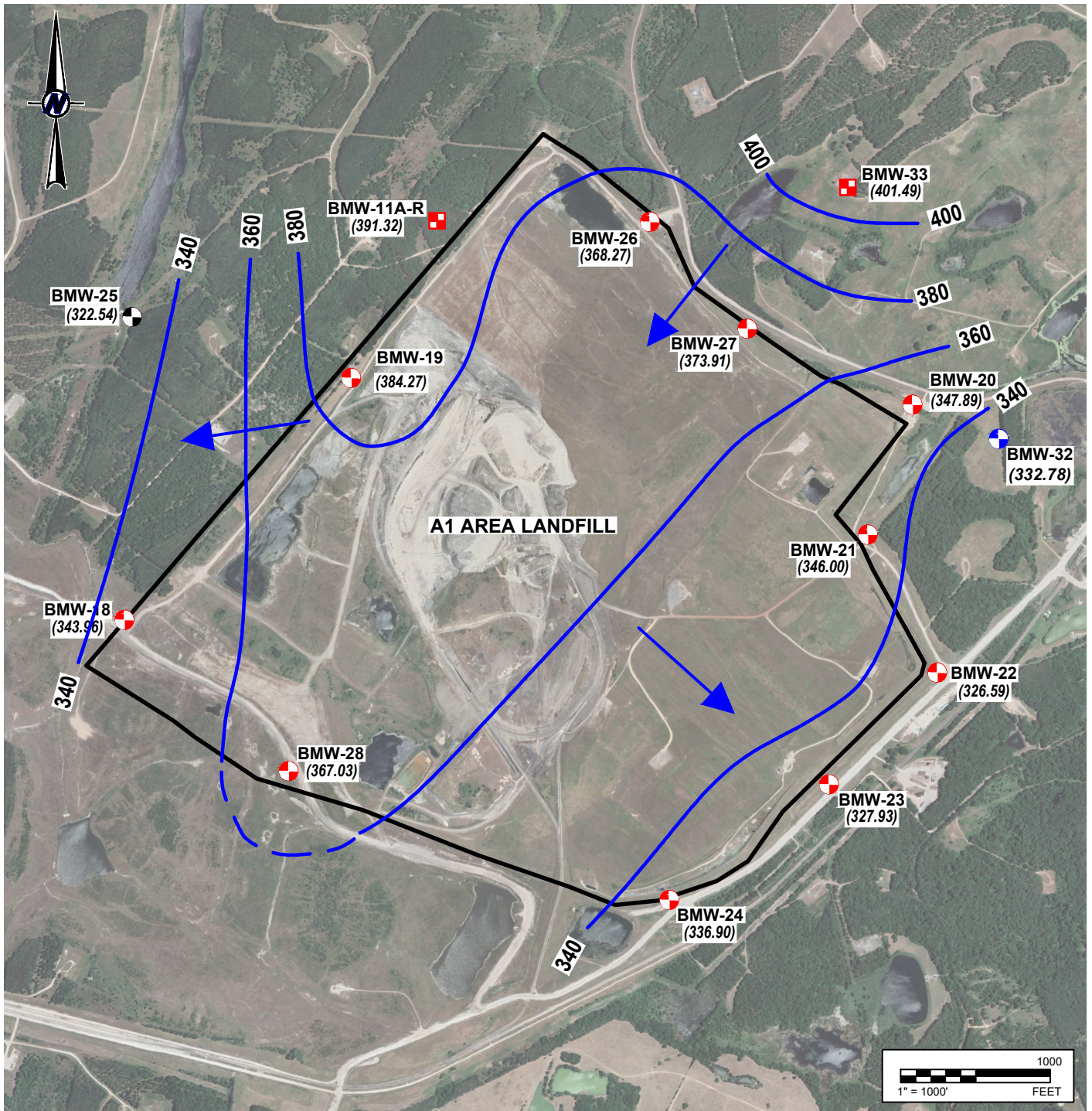
(0'-32') Grout  
(32'-36') Bentonite pellets  
(36'-48') 20/40 sand










**ATTACHMENT 2**

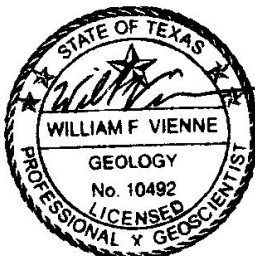
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**2023 Groundwater Potentiometric Surface Maps**



**LEGEND**

-  DOWNGRADIENT CCR MONITORING WELL
-  UPGRADIENT CCR MONITORING WELL
-  ACM DELINEATION MONITORING WELL
-  NON-CCR MONITORING WELL
-  (358.02) GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
-  340 GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 20 FT)
-  INFERRED GROUNDWATER FLOW DIRECTION



01/31/2024

**MARTIN LAKE STEAM ELECTRIC STATION  
TATUM, TEXAS**

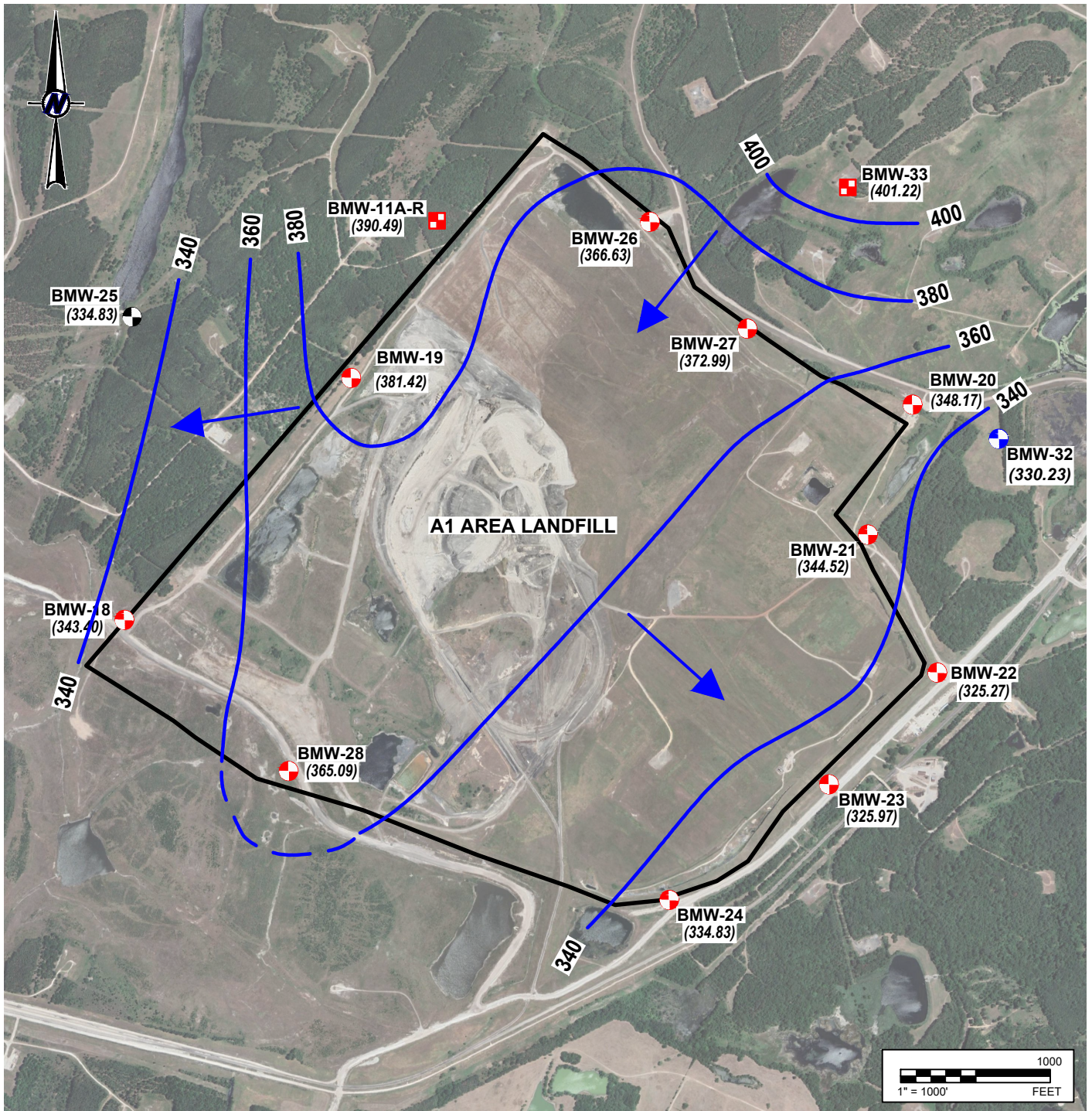
**A1 AREA LANDFILL  
POTENTIOMETRIC SURFACE MAP  
MAY 2023**

PROJECT: 23643.03	BY: SLB	DATE: 12/19/2023	CHECKED: WV
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Engineering and Geoscience  
Texas Registrations: Engineering F-8542, Geoscience 50127

**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATE JANUARY 2021



**LEGEND**



DOWNGRADIENT CCR MONITORING WELL



UPGRADIENT CCR MONITORING WELL



ACM DELINEATION MONITORING WELL



NON-CCR MONITORING WELL

(358.02)

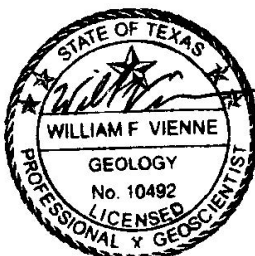
GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)

340

GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR  
(C.I. = 20 FT)



INFERRED GROUNDWATER FLOW DIRECTION



01/31/2024

**MARTIN LAKE STEAM ELECTRIC STATION  
TATUM, TEXAS**

**A1 AREA LANDFILL  
POTENTIOMETRIC SURFACE MAP  
AUGUST 2023**

PROJECT: 23643.03 BY: SLB DATE: 12/19/2023 CHECKED: WV

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Engineering and Geoscience  
Texas Registrations: Engineering F-8542, Geoscience 50127

**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATE JANUARY 2021