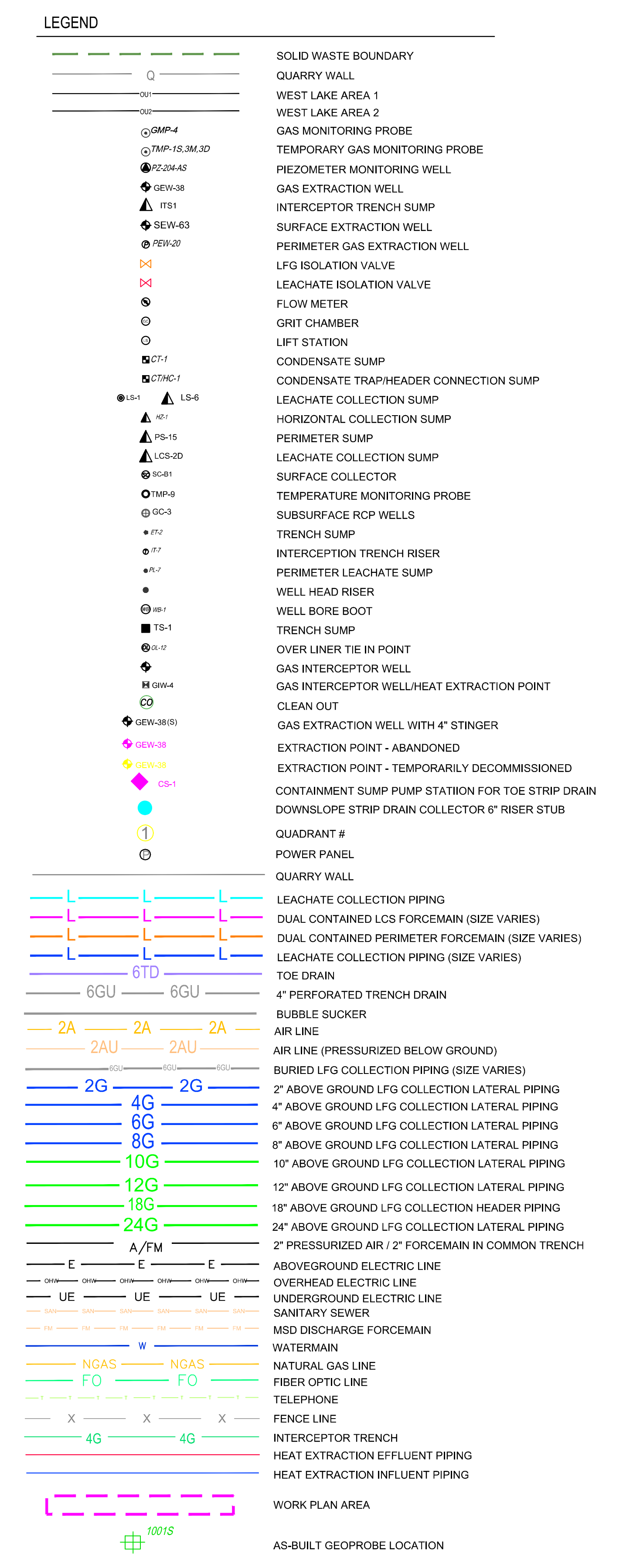
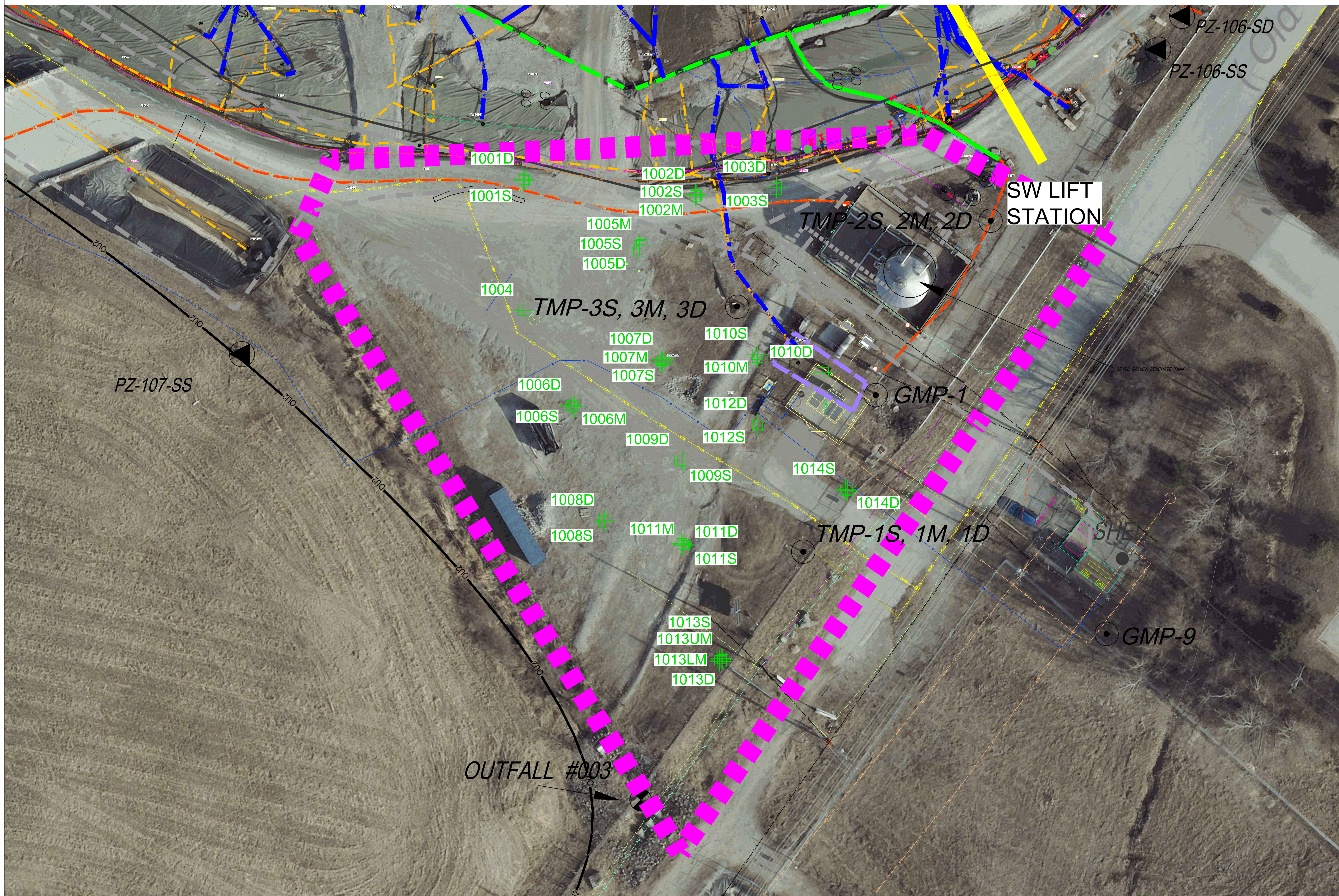


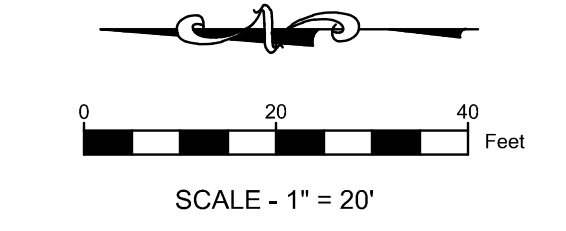
## APPENDIX 3

### MONITORING POINT LOCATIONS



PROBE ID	NORTHING	EASTING	GROUND ELEVATION (07212020)	CODE
1001D	1067028.4	515338.1	460.58	Geoprobe Location
1001S	1067028.8	515337.5	460.39	Geoprobe Location
1002D	1066946.8	515330.8	460.19	Geoprobe Location
1002M	1066946.9	515330.1	460.17	Geoprobe Location
1002S	1066946.4	515330.3	460.12	Geoprobe Location
1003D	1066908.2	515334.1	460.13	Geoprobe Location
1003S	1066908.3	515333.4	459.95	Geoprobe Location
1004	1067028.7	515275.6	458.20	Geoprobe Location
1005D	1066973.8	515303.9	459.77	Geoprobe Location
1005M	1066972.4	515306.9	460.07	Geoprobe Location
1005S	1066973.4	515306.4	459.94	Geoprobe Location
1006D	1067005.8	515230.2	456.34	Geoprobe Location
1006M	1067004.4	515229.5	456.44	Geoprobe Location
1006S	1067005.6	515229.6	456.49	Geoprobe Location
1007D	1066962.247	515252.168	456.423	Geoprobe Location
1007M	1066963.04	515251.769	456.726	Geoprobe Location
1007S	1066962.443	515250.674	456.491	Geoprobe Location
1008D	1066990.094	515175.275	456.066	Geoprobe Location

PROBE ID	NORTHING	EASTING	GROUND ELEVATION (07212020)	CODE
1008S	1066990.512	515174.616	456.163	Geoprobe Location
1009D	1066954.241	515204.134	455.912	Geoprobe Location
1009S	1066952.908	515203.649	455.731	Geoprobe Location
1010D	1066918.462	515253.469	456.807	Geoprobe Location
1010M	1066917.154	515253.193	456.798	Geoprobe Location
1010S	1066916.996	515254.637	456.878	Geoprobe Location
1011D	1066952.189	515163.955	455.228	Geoprobe Location
1011M	1066953.517	515164.247	455.317	Geoprobe Location
1011S	1066952.554	515163.324	455.362	Geoprobe Location
1012D	1066917.131	515221.285	455.134	Geoprobe Location
1012S	1066917.328	515220.426	455.029	Geoprobe Location
1013B	1066934.496	515108.016	454.152	Geoprobe Location
1013D	1066935.251	515108.391	454.03	Geoprobe Location
1013M	1066933.837	515108.886	454.178	Geoprobe Location
1013S	1066934.478	515109.505	454.232	Geoprobe Location
1014D	1066874.342	515189.679	453.127	Geoprobe Location
1014S	1066875.173	515190.152	453.186	Geoprobe Location



NOTES:  
 \* AERIAL TOPOGRAPHY AND PHOTOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS CO. AND IS DATED DECEMBER 10, 2019.

PREPARED BY:  Engineering for a Better World 3377 Hallenberg Dr. Bridgeton, MO 63044 Ph: 217-483-3118 Missouri State Certificate of Authority # E-200912213	PROJECT: BRIDGETON LANDFILL SOIL GAS MONITORING WORK PLAN AS-BUILT DRAWINGS BRIDGETON, ST. LOUIS COUNTY, MO	PREPARED FOR: BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	AUGUST 2020 DESIGNED BY: AMR APPROVED BY: DRP <b>003</b> REVISIONS: DATE DSN APV	DRAWING #
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**AS-BUILT PROBE LOCATIONS**

PROJECT NUMBER: BT-2009-20 FILE PATH: C:\Users\amr\Desktop\Project\Engineering\Bridgeton\10-1488-131\2017\SoilGas\AS-Built\AS-Built Probe Locations\AS-Built Probe Locations.dwg

## APPENDIX 4

### MONITORING POINT INSTALLATION



## MEMORANDUM

**Date:** August 14, 2020  
**From:** Bill Abernathy  
**To:** Thomas A. Bilgri – Tetra Tech  
**Re:** BT-209 – Geology of Bridgeton Landfill Soil Gas Investigation Area

The project area lies within Quaternary-age silt-capped alluvial deposits of interbedded clays and silts that generally coarsen downward to well-sorted sands and gravels. The alluvial deposits, sourced by the Missouri River, overlie Mississippian-age limestone bedrock that exhibits varying degrees of weathering at the contact surface. Quaternary terrace and loess deposits of predominantly silts and clayey silts are located at the higher elevations immediately southeast of the project area.

Perched groundwater occurs within the sands and gravels, and a considerable amount of groundwater is likely stored in the clays and silts. The less permeable clays and silts likely behave as lenticular, discontinuous aquitards that limit vertical groundwater flow between the coarser units. This hydrogeological environment formed the basis for the design/installation of multiple screened probes at the sampled locations.

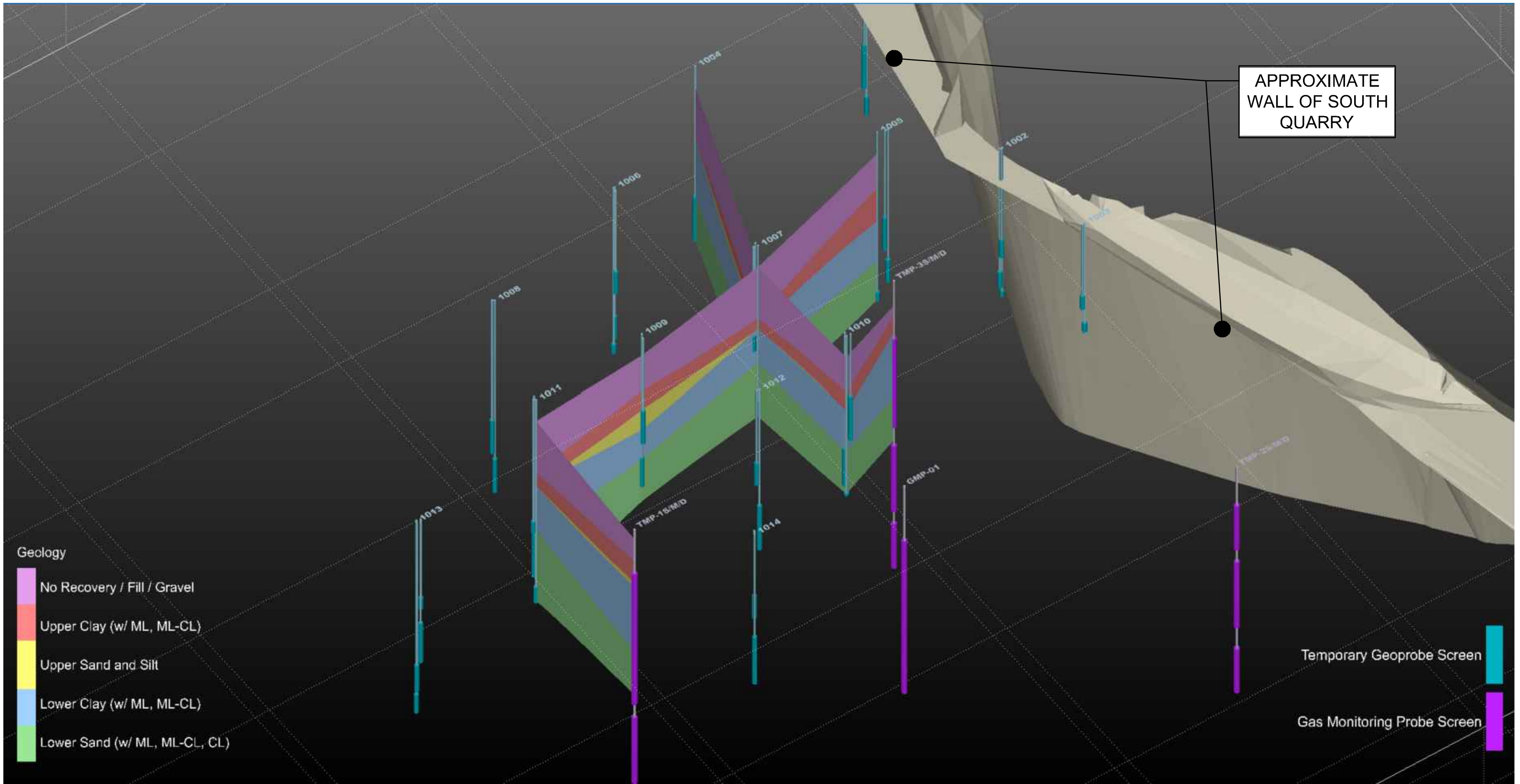
The alluvial deposits sampled immediately prior to installations of the project probes have been divided into four general lithological units that overlie the weathered limestone. From the top down, the units have been designated, for the project, as the Upper Clay, the Upper Sand, the Lower Clay, and the Lower Sand. The Upper Clay is characterized primarily by deposits of soft to medium stiff silty clay with interbedded lenses of silt. The Upper Sand is characterized primarily by fine-grained sand and clayey silt; the Upper Sand unit is not present at all the probe locations. The Lower Clay is characterized by a plastic clay unit that contains appreciable silt in its upper half. The Lower Clay abruptly contacts the Lower Sand unit beneath it. The Lower Sand unit is generally comprised of silty, fine- to medium-grained, dense, well-sorted sand with occasional bands of plastic clay.

Hydro-excavating activities, undertaken to investigate the presence/absence of underground utilities at the probe locations, indicated the alluvial deposits are typically overlain by fill materials (gravels to shot-rock sized) and/or asphalt pavement that precluded advancement of the probe holes using direct push/percussion samplers (Macro-Core®, AMS® dual-tube, etc.) in the top eight (8) to twelve (12) feet. Given these conditions, sampling of the upper fill was not performed at each location.


The 3D fence diagram of the geology that is presented in **Attachment A** was constructed using the descriptions of sampled materials provided in the borehole logs (**Attachment B**). The diagram provides a visual representation of the four described units of alluvial deposits and their interpolated correlation between sampled locations. Details regarding each of the generalized alluvial units depicted on the fence

diagram are provided in the borehole logs. Probe construction information (screened intervals, annular backfill details, depths-to-water, survey data, etc.) is also provided in the borehole logs.

**ATTACHMENT A**  
**3D VISUALIZATION OF GEOLOGY IN INVESTIGATION AREA**



NOTE: - GEOLOGY IS INTERPOLATED BETWEEN GEOPROBES.

PREPARED BY  Engineering for a Better World <b>FEEZOR</b> ENGINEERING, INC. <small>3377 Hollenberg Dr., Bridgeton, MO 63044 Ph. 217-483-3118 Missouri State Certificate of Authority # E-200912211</small>	PROJECT BRIDGETON LANDFILL SOIL GAS MONITORING PLAN BRIDGETON, ST. LOUIS COUNTY, MO	PREPARED FOR BRIDGETON LANDFILL, LLC. 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	AUGUST 2020 DESIGNED BY: AMR APPROVED BY: AW	FIGURE # <b>A</b>
	DRAWING TITLE <b>3D VISUALIZATION OF GEOLOGY IN INVESTIGATION AREA</b>		REVISIONS: # _____ DATE / / DSN. APV.	# _____ / / _____
PROJECT NUMBER: BT-209-20		FILE PATH: C:\Users\arobe\Dropbox\Feezor Engineering\Bridgeton\BT-209 (Soil Gas COA and PMIS) - AB Drawings - Report Figures		

**ATTACHMENT B**  
**GEOPROBE LOGS AND AS-BUILT DIAGRAMS**





Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

**1001S**

**1001D**

Easting: 515337.5  
 Northing: 1067028.8  
 GS Elev: 460.39  
 Drill Date: 5/1/20  
 Sampled Depth: N/A

Easting: 515338.1  
 Northing: 1067028.4  
 GS Elev: 460.58  
 Drill Date: 4/29/20  
 Sampled Depth: 29.2'

Probe Location: **1001**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			
4	CH4 = not measured in bentonite plug			Halliburton Casing-Seal bentonite granules
6	not sampled			
8	CH4 = not measured in bentonite plug			
10	not sampled			
12	CH4 = 0.0%			
14	1 35 / 48		SILT (ML), 10GY 3/1 (very dark greenish gray), dry to moist, soft, weak, no dilatancy, trace coarse SD	13.3 ft
16	CH4 = 0.0%		CLAY (CH), moist, med stiff to soft, high plasticity	
18	2 38 / 48		SILT (ML), as above, moist, soft, with very silty CL lenses and laminae in bottom 16"	silt interval
20	CH4 = 0.0%			
22	3 28 / 48			23.0 ft
24	CH4 = 0.0%		CLAY (CH), 5GY 2.5/1 (greenish black), dry to moist, very stiff to hard, high plasticity	installed 5/1/20
26	4 48 / 48			25.8 ft
28	CH4 = 0.0%		SILT (ML), moist, dense, coarsens downward to sandy ML, slow dilatancy, black stained subangular gravel in shoe	Unimin #1 (14/30) silica sandpack
30	5 26 / 28 CH4 = 0.0%			sand/silt interval
32			Bottom of Hole = 29.2 feet	Refusal at 29.2 ft
34				installed 5/1/20



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<u>1002S</u>	<u>1002D</u>	<u>1002M</u>
Easting: 515330.3	Easting: 515330.8	Easting: 515330.1
Northing: 1066946.4	Northing: 1066946.8	Northing: 1066946.9
GS Elev: 460.12	GS Elev: 460.19	GS Elev: 460.17
Drill Date: 5/7/20	Drill Date: 4/30/20	Drill Date: 5/7/20
Sampled Depth: N/A	Sampled Depth: 29.5'	Sampled Depth: N/A

Probe Location: **1002**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			
4	CH4 = not measured in bentonite plug			
6	not sampled			
8	CH4 = not measured in bentonite plug			Halliburton Casing-Seal bentonite granules
10	not sampled			
12	CH4 = 0.0%			
14	1 30 / 48		SILTY CLAY (CL), moist, stiff, slow dilatancy	
			CLAY (CH), very stiff to hard, dry to moist, silty lenses	
16	CH4 = 0.0%			15.7 ft
18	2 41 / 48		SILT (ML), soft, moist, slow dilatancy, trace organic inclusions	4.0 ft screen silt interval
20	CH4 = 0.0%			20.0 ft
22	3 44 / 48		CLAY (CH), silty top 12 inches, very stiff, dry to moist, homogenous	installed 5/7/20
24	CH4 = 0.0%			23.3 ft
26	4 48 / 48		SILT (ML), dry to moist with minor wet lenses with rapid dilatancy, 10GY 4/1 (dark greenish gray)	silt interval 3.5 ft screen
28	CH4 = 0.0%		CLAY (CH), silty top half, moist, soft to medium stiff, high plasticity	installed 5/7/20
30	5 16 / 18 CH4 = 0.0%		SILT (ML) with itb CH/CL lenses, moist, soft to stiff CLAY (CH) as above SILT (ML) w/ GVL, SM, CH/CL, dry to moist	1.2 ft screen silt interval 26.7 ft Unimin #1 (14/30) silica sandpack 28.0 ft
32			Bottom of Hole = 29.5 feet	Refusal at 29.5 ft installed 5/7/20
34				



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

**1003S**

**1003D**

Easting: 515333.4  
 Northing: 1066908.3  
 GS Elev: 459.95  
 Drill Date: 5/4/20  
 Sampled Depth: N/A

Easting: 515334.1  
 Northing: 1066908.2  
 GS Elev: 460.13  
 Drill Date: 4/30/20  
 Sampled Depth: 20.0'

Probe Location: **1003**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			<p>Halliburton Casing-Seal bentonite granules</p> <p>3.0 ft screen installed 5/4/20</p> <p>2 ft screen installed 5/1/20</p> <p>Unimin #1 (14/30) silica sandpack</p>
4	CH4 = not measured in bentonite plug			
6	not sampled			
8	CH4 = not measured in bentonite plug			
10	not sampled			
12	CH4 = 0.0%			
14	1 32 / 48		CLAY (CL), silty, 10Y 3/1 (very dark greenish gray), dry, medium stiff, low plasticity	14.7 ft
16	CH4 = 0.0%		CLAY (CH), 5GY 3/1 (very dark greenish gray), dry to moist, medium stiff to stiff, high plasticity	
18	2 48 / 48			
20	CH4 = 0.0%		SILT (MH), 10Y 3/1 (very dark greenish gray), dry to moist, elastic, slow dilatancy, trace coarse sand	17.9 ft
			Bottom of Hole = 20.0 feet	Refusal at 20.0 ft
22				
24				
26				
28				
30				
32				
34				



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

**1004**  
 Easting: 515275.6  
 Northing: 1067028.7  
 GS Elev: 458.20  
 Drill Date: 4/27/20  
 Sampled Depth: 35.2'

Probe Location: **1004**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			Halliburton Casing-Seal bentonite granules
4	CH4 = 0.0%			
6	not sampled			
8	CH4 = 0.0%			
10	not sampled			
12	CH4 = 0.0%			
14	1 35 / 48		SILTY CLAY (CL), 10Y 2.5/1 (greenish black), moist to wet, medium stiff to soft, homogenous, rapid dilatancy, low to med plasticity, grades to CLAY (CH), 10Y 3/1 (very dark greenish gray), moist, stiff to very stiff, high plasticity	25.3 ft
16	CH4 = 0.0%			
18	2 48 / 48			
20	CH4 = 0.0%			
22	3 48 / 48		SILT (ML), 10GY 3/1 (very dark greenish gray), moist, soft, weak, slow dilatancy, some CH lenses	sand/silt interval
24	CH4 = 0.0%			
26	4 48 / 48		SAND (SP-SM), rounded to subrounded, well sorted, fine grained, 5GY 3/1 (very dark greenish gray), wet, medium dense, occasional 1-in CL bands, coarsens downward to fine-to-medium grained, grades to 10Y 2.5/1 (greenish black) mottled with 10Y 6/1 (greenish gray) and 5G 7/1 (light greenish gray), loose to medium dense	10.0 ft screen
28	CH4 = 0.0%			
30	5 30 / 48		CLAY (CH), moist, med stiff to soft, high plasticity	Unimin #1 (14/30) silica sandpack
32	CH4 = not measured below water level			
34	6 29 / 38		Refusal at 35.2 ft	
			Bottom of Hole = 35.2 feet	installed 4/29/20



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1005S</b>	<b>1005M</b>	<b>1005D</b>
Easting: 515306.4	Easting: 515306.9	Easting: 515303.9
Northing: 1066973.4	Northing: 1066972.4	Northing: 1066973.8
GS Elev: 459.94	GS Elev: 460.07	GS Elev: 459.77
Drill Date: 5/13/20	Drill Date: 5/13/20	Drill Date: 4/29/20
Sampled Depth: N/A	Sampled Depth: N/A	Sampled Depth: 33.9'

Probe Location: **1005**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			
4	CH4 = 0.0%			
6	not sampled			Halliburton Casing-Seal bentonite granules
8	CH4 = 0.0%			
10	1 42 / 48		SILTY CLAY (CL), with occasional gravel, medium stiff, dry to moist, no dilatancy	
12	CH4 = 0.0%			
14	2 37 / 48		CLAY (CH), dry, stiff, high plasticity	
16	CH4 = 0.0%			15.6 ft
18	3 38 / 48		SILT (ML), dry, moisture increases with depth, soft to medium stiff, rapid dilatancy in moist zones	silt interval
20	CH4 = 0.0%			
22	4 23 / 48		CLAY (CH), dry to moist, occasional iron stained inclusions, very stiff	22.8 ft
24	CH4 = 0.0%			installed 5/13/20
26	5 48 / 48		SILT (ML), soft, moist, rapid dilatancy, 10GY 3/1 (very dark greenish gray)	Unimin #1 (14/30) silica sandpack
28	CH4 = 0.0%			24.7 ft
30	6 48 / 48		SAND (SM), moist to wet, dense, micaceous SILT (ML), moist to wet, soft, weak	5.0 ft screen
32	CH4 = 0.0%		CLAY (CH), high plasticity, medium stiff to stiff, moist	installed 5/13/20
34	7 23 / 23 CH4 = not measured below water level		SILT (ML) as above, soft, moist to wet CLAY (CH) as above, wet, medium stiff to soft SILT (ML), with inclusions, wet, some deformation	2.0 ft screen
			LIMESTONE gravel mixed with SM/ML/CH-CL	Refusal at 33.9 ft
			Bottom of Hole = 33.9 feet	installed 5/12/20



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Rob Scharringhausen, John Gates**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1006M</b>	<b>1006D</b>	<b>1006S</b>
Easting: 515229.5	Easting: 515230.2	Easting: 515229.6
Northing: 1067004.4	Northing: 1067005.8	Northing: 1067005.6
GS Elev: 456.44	GS Elev: 456.34	GS Elev: 456.49
Drill Date: 5/1/20	Drill Date: 4/24/20	Drill Date: 5/1/20
Sampled Depth: N/A	Sampled Depth: 33.0'	Sampled Depth: N/A

Probe Location: **1006**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			Halliburton Casing-Seal bentonite granules
4	CH4 = 0.0%			
6	not sampled			
8	CH4 = 0.0%			
10	not sampled			5.0 ft screen
12	CH4 = 0.0%			
14	1 36 / 48		SILTY CLAY (CL), 5GY 3/1 (very dark greenish gray), moist, medium stiff, homogenous, no dilatancy, low to med plasticity	14.8 ft
16	CH4 = 0.0%			5.0 ft screen
18	2 33 / 48		SILT (ML), 5GY 3/1 (very dark greenish gray), wet, soft to medium stiff, weak, slow dilatancy, nonplastic, trace sand and clay	
20	CH4 = 0.0%			installed 5/1/20
22	3 48 / 48		CLAY (CH), 5GY 2.5/1 and 10Y 3/1 (greenish black to very dark greenish gray), dry to moist, very stiff to hard w/ med stiff zones, no dilatancy, high plasticity, increasing silt with depth	Pel-Plug TR-30 1/4" coated bentonite pellets
24	CH4 = 0.0%			
26	4 48 / 48		SAND (SP-SM), rounded to subrounded, well sorted, fine grained, N 4 (dark gray), septic chemical odor, wet, medium dense, laminated in zones	24.7 ft
28	CH4 = not measured below water level			5.0 ft screen
30	5 48 / 48		SILTY CLAY (CL), 5GY 3/1, moist, med stiff SILT (ML), 5GY 3/1, wet, soft, rapid dilatancy CLAY (CH), moist, soft, slow dilatancy SAND (SP-SM), well sorted, fine grain, med dense CLAY (CH) as above, stiff, trace coarse sand, high plasticity	
32	6 12 / 12		SAND (SP-SM), fine grained, 5GY 4/1 (dark greenish gray), chemical/leachate odor, wet, well sorted CLAY (CH), soft, moist, slow dilatancy, high plasticity SAND (SP-SM) as above	31.1 ft
34			LIMESTONE, wea frgs in moist to wet clay matrix Bottom of Hole = 33.0 feet	2 ft screen Unimin #1 (14/30) silica sandpack installed 4/30/20 Refusal at 33.0 ft



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<u>1007S</u>	<u>1007M</u>	<u>1007D</u>
Easting: 515250.7	Easting: 515251.8	Easting: 515252.2
Northing: 1066962.4	Northing: 1066963.0	Northing: 1066962.2
GS Elev: 456.49	GS Elev: 456.73	GS Elev: 456.42
Drill Date: 5/12/20	Drill Date: 5/12/20	Drill Date: 4/28/20
Sampled Depth: N/A	Sampled Depth: N/A	Sampled Depth: 34.4'

Probe Location: **1007**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			
4	CH4 = 0.0%			
6	not sampled			
8	CH4 = 0.0%			
10	not sampled			
12	CH4 = 0.0%			
14	1 39 / 48		SILTY CLAY (CL), dry, very stiff, homogenous	
16	CH4 = 0.0%		CLAY (CH), very stiff, dry to moist, no dilatancy	15.5 ft
18	2 29 / 48		SILT (ML), moist, slow to rapid dilatancy, weak, trace clay streaks	silt interval
20	CH4 = 0.0%			18.9 ft
22	3 48 / 48		CLAY (CH), 5GY 4/1 (dark greenish gray), very stiff to hard, plastic	installed 5/12/20
24	CH4 = 0.0%		SILT (ML), moist, soft, rapid dilatancy, weak	
26	4 48 / 48		SAND (SM), moist to wet, fine grained, coarsens downward, medium dense, micaceous, well sorted, silty bottom 4 inches	8.0 ft screen
28	CH4 = 0.0%			
30	5 34 / 48		CLAY (CH), very stiff, moist, high plasticity	30.3 ft
32	CH4 = not measured below water level		SAND (SM), wet, fine to medium grained, coarsens downward, micaceous, well sorted, chemical odor	installed 5/12/20
34	6 14 / 29		LIMESTONE, weathered gravel, ang to subrounded	31.0 ft Unimin #1 (14/30) silica sandpack sand interval
			Bottom of Hole = 34.4 feet	Refusal at 34.4 ft installed 5/12/20

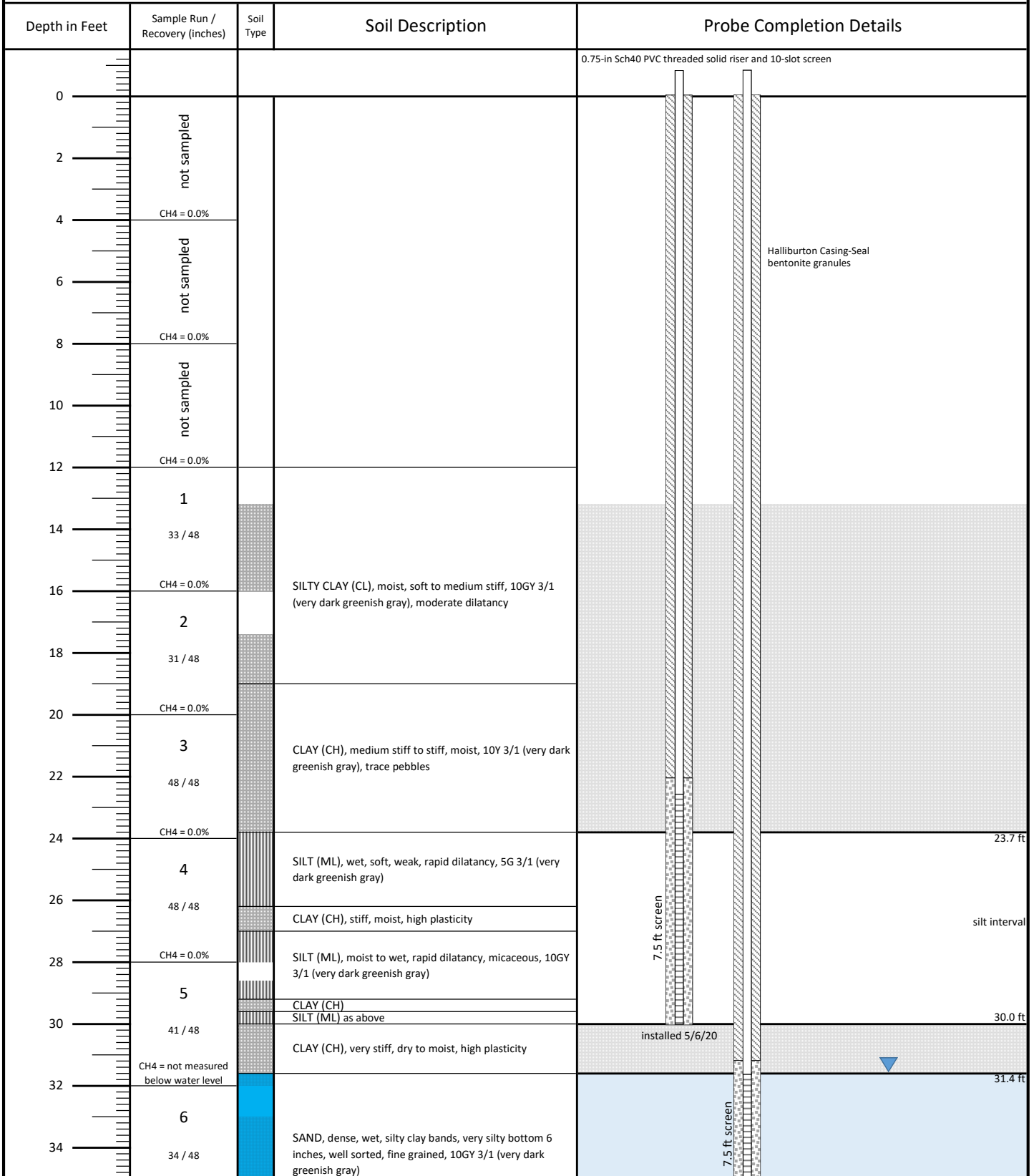


Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1008S</b>	<b>1008D</b>
Easting: 515174.6	Easting: 515175.3
Northing: 1066990.5	Northing: 1066990.1
GS Elev: 456.16	GS Elev: 456.07
Drill Date: 5/6/20	Drill Date: 4/27/20
Sampled Depth: N/A	Sampled Depth: 39.1'

Probe Location: **1008**







Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1008S</b>	<b>1008D</b>
Easting: 515174.6	Easting: 515175.3
Northing: 1066990.5	Northing: 1066990.1
GS Elev: 456.16	GS Elev: 456.07
Drill Date: 5/6/20	Drill Date: 4/27/20
Sampled Depth: N/A	Sampled Depth: 39.1'

Probe Location: **1008**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
36				<p>Unimin #1 (14/30) silica sandpack</p> <p>Refusal at 39.1 ft</p>
38	7 37 / 37		SILT (ML), wet, slow dilatancy, 10Y 6/1 (greenish gray) mottled with 5G 3/1 (very dark greenish gray) CLAY (CH), moist, vry stiff, 5G 3/1 as above SAND, well sorted, fine, rounded, wet	
			Bottom of Hole = 39.1 feet	
40				



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1009S</b>	<b>1009D</b>
Easting: 515203.6	Easting: 515204.1
Northing: 1066952.9	Northing: 1066954.2
GS Elev: 455.73	GS Elev: 455.91
Drill Date: 5/7/20	Drill Date: 4/30/20
Sampled Depth: N/A	Sampled Depth: 33.5'

Probe Location: **1009**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			
4	CH4 = 0.0%			
6	not sampled			Halliburton Casing-Seal bentonite granules
8	CH4 = 0.0%			
10	1 42 / 48		SILTY CLAY (CL), dry to moist, increasing plasticity with depth, soft, wet lenses with rapid dilatancy	
12	CH4 = 0.0%			
14	2 34 / 48		SILT (MH), clayey, dry to moist, 10GY 4/1 (dark greenish gray)	12.5 ft
16	CH4 = 0.0%			silt interval
18	3 27 / 48		SILTY CLAY (CL) as above, moist, moderate dilatancy	19.0 ft
20	CH4 = 0.0%			installed 5/7/20
22	4 47 / 48		CLAY (CH), medium stiff, moist, 5GY 4/1 (dark greenish gray)	
24	CH4 = 0.0%			
26	5 30 / 48		SAND (SM), with silty lenses, dense, wet, fine grained, well sorted, occasional CH bands in bottom half	23.7 ft
28	CH4 = not measured below water level			6.5 ft screen Unimin #1 (14/30) silica sandpack
30	6 34 / 48		CLAY (CH), med stiff, 10Y 3/1 (vry drk greenish gray) SAND (SM) as above, wet, micaceous CLAY (CH) as above soft, wet	installed 5/6/20
32	7 18 / 18		SAND (SM), fine to medium grained, well sorted, coarsens downward, wet, very dense, with CH bands CLAY (CH), plastic, soft, wet SAND (SM) as above, fine to medium grained SILT (ML), clayey, soft, rapid dilatancy CLAY (CH) as above	
34			LIMESTONE fragments and CLAY (CH), weathered Bottom of Hole = 33.5 feet	Refusal at 33.5 ft



Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1010S</b>	<b>1010D</b>	<b>1010M</b>
Easting: 515254.6	Easting: 515253.5	Easting: 515253.2
Northing: 1066917.0	Northing: 1066918.5	Northing: 1066917.2
GS Elev: 456.88	GS Elev: 456.81	GS Elev: 456.80
Drill Date: 5/8/20	Drill Date: 4/28/20	Drill Date: 5/8/20
Sampled Depth: N/A	Sampled Depth: 31.5'	Sampled Depth: N/A

Probe Location: **1010**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
0				0.75-in Sch40 PVC threaded solid riser and 10-slot screen
2	not sampled			Halliburton Casing-Seal bentonite granules
4	CH4 = 0.0%			
6	not sampled			
8	CH4 = 0.0%			
10	1 35 / 48		SILTY CLAY (CL), occasional gravel, moist, iron stained, medium stiff to very stiff, increasing silt with depth	
12	CH4 = 0.0%			
14	2 34 / 48		CLAYEY SILT (MH), soft, moist with wet zones in top half, weak slow to rapid dilatancy	12.5 ft
16	CH4 = 0.0%			silt interval
18	3 25 / 48		SILT (ML), moist, slow dilatancy, CH lenses, trace root structures	19.4 ft
20	CH4 = 0.0%			installed 5/8/20
22	4 48 / 48		CLAY (CH), very stiff, dry to moist, high plasticity, 10GY 3/1 (very dark greenish gray)	21.7 ft
24	CH4 = 0.0%			
26	5 48 / 48		SILT/SAND (ML), moist with wet zones with rapid dilatancy, fine grained silty sand lenses, occasional CH bands, micaceous	8.5 ft screen
28	CH4 = 0.0%			
30	6 35 / 42		CLAY (CH), very stiff, moist, high plasticity	
			SAND (SM), fine grained, silty banding, wet	Pel-Plug TR-30 1/4" coated bentonite pellets
			CLAY (CH) as above, 10GY 3/1 (very dark greenish gray)	installed 5/8/20
			SILT (ML), abundant sand lenses & CH balls	
	CH4 = not measured below water level		LIMESTONE coarse angular fragments, wet	0.5 ft screen
32			Bottom of Hole = 31.5 feet	silt interval Refusal at 31.5 ft
34				installed 5/8/20

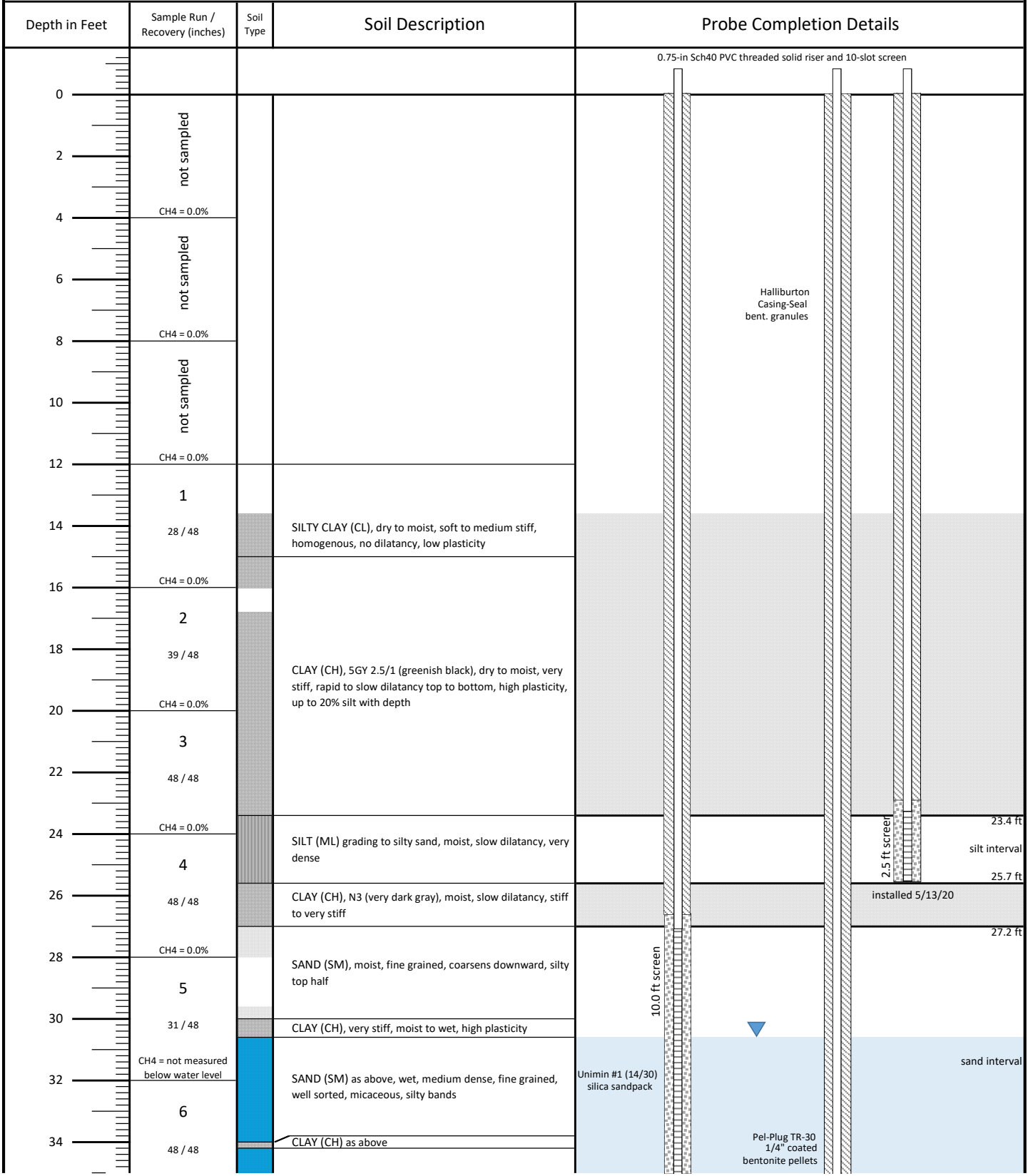


Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

<b>1011M</b>	<b>1011D</b>	<b>1011S</b>
Easting: 515164.2	Easting: 515164.0	Easting: 515163.3
Northing: 1066953.5	Northing: 1066952.2	Northing: 1066952.6
GS Elev: 455.32	GS Elev: 455.23	GS Elev: 455.36
Drill Date: 5/14/20	Drill Date: 4/27/20	Drill Date: 5/13/20
Sampled Depth: N/A	Sampled Depth: 41.5'	Sampled Depth: N/A

Probe Location: **1011**





Client: **Bridgeton Landfill LLC**  
 Project Location: **Bridgeton, MO**  
 Project Name: **Soil Gas Probes CQA**  
 FEI Project Number: **BT-209**  
 FEI Inspector: **Bill Abernathy**  
 Drilling Contractor: **Bulldog Drilling**  
 Driller: **Josh Edwards**  
 Helper(s): **Shawn Guy**

Drilling/Sampling Method: **AMS PowerProbe 9500-VTR**

**1011M**

Easting: 515164.2  
 Northing: 1066953.5  
 GS Elev: 455.32  
 Drill Date: 5/14/20  
 Sampled Depth: N/A

**1011D**

Easting: 515164.0  
 Northing: 1066952.2  
 GS Elev: 455.23  
 Drill Date: 4/27/20  
 Sampled Depth: 41.5'

**1011S**

Easting: 515163.3  
 Northing: 1066952.6  
 GS Elev: 455.36  
 Drill Date: 5/13/20  
 Sampled Depth: N/A

Probe Location: **1011**

Depth in Feet	Sample Run / Recovery (inches)	Soil Type	Soil Description	Probe Completion Details
36	7 39 / 48	[Blue]	SAND (SM) as above, wet, dense, fine grained, well sorted, with stiff CH lenses	[Diagram of probe completion details showing installed 5/14/20 and 36.4 ft depth]
38			CLAY (CH), very stiff, moist, homogenous	
40	8 14 / 18	[Blue]	SAND (SM), wet, fine grained, dense, well sorted, laminar	[Diagram of probe completion details showing 3.5 ft screen and sand interval]
42			LIMESTONE, iron stained, blocky	
			Bottom of Hole = 41.5 feet	installed 5/14/20 Refusal at 41.5 ft