February 5, 2025
File No. 27224624.00

Mr. Mike Smith, P.E.
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue
Des Moines, Iowa 50321

Subject: Landfill Gas Monitoring Points Installation Documentation
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Dear Mike:

SCS Engineers, on behalf of Iowa Waste Services, LLC., is submitting the installation documentation for landfill gas (LFG) monitoring points at the Loess Hills Regional Sanitary Landfill (Landfill).

In correspondence dated August 7, 2023 (Doc #107406), a request was made to modify the LFG monitoring network at the Landfill by replacing the groundwater underdrain outlet monitoring points with perimeter monitoring points. The Iowa Department of Natural Resources approved this request in the permit revision dated August 11, 2023 (Doc #107455). The installation documentation for these monitoring points is attached.

Attached is Figure 1 with the new monitoring points highlighted. The LFG monitoring plan will incorporate the new perimeter monitoring points beginning in the first quarter of 2025.

If you have any questions or comments regarding this documentation, please contact Tim Buelow at (515) 681-5455. Thank you.

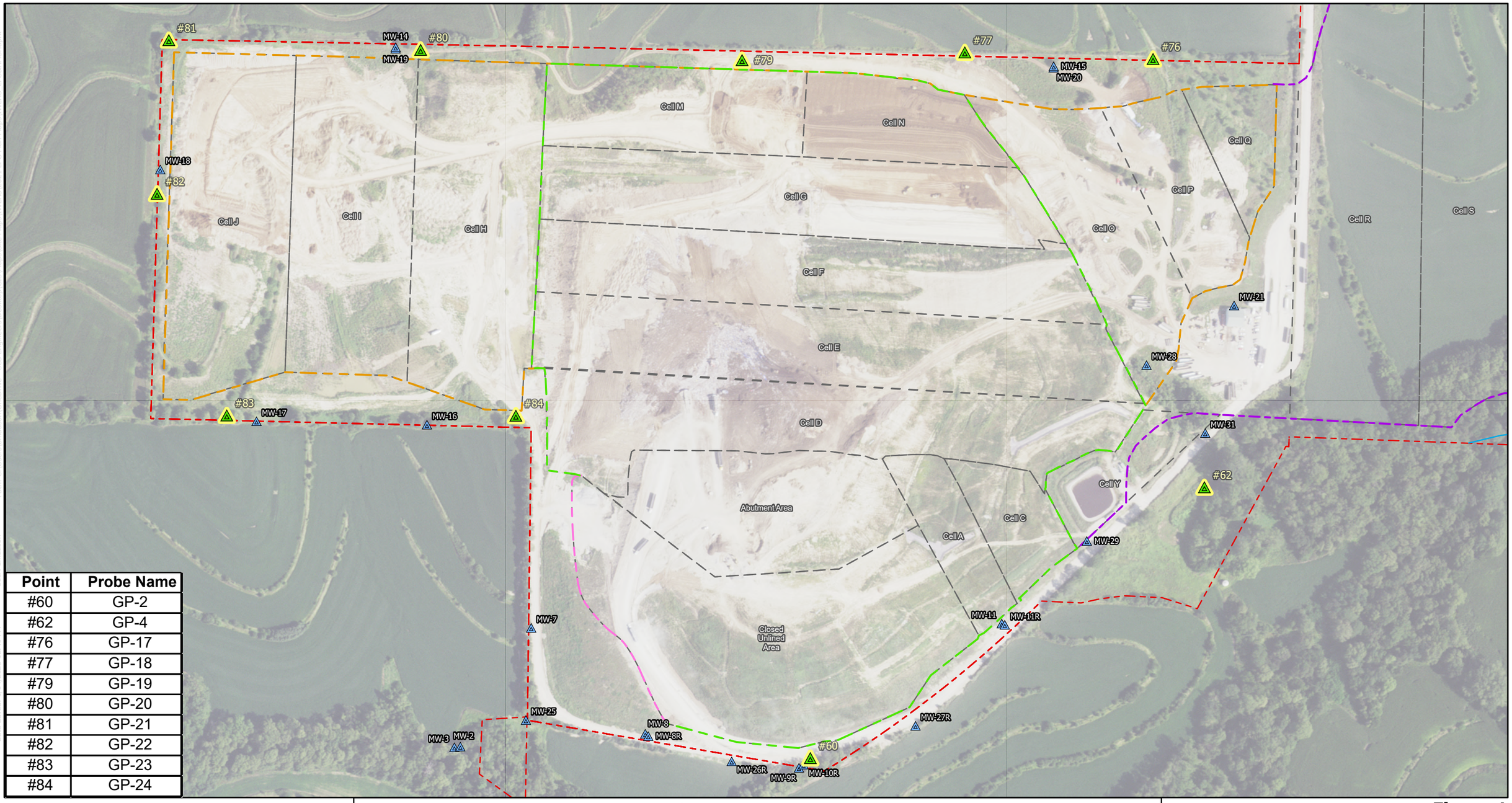
Sincerely,

Nathan Ohrt
Senior Project Professional
SCS Engineers

Timothy C. Buelow, P.E.
Senior Project Advisor
SCS Engineers

NPO/TCB

Copies: Mr. Kelly Danielsen
Ms. Rachel Hanigan
Mr. Bret Stephens
Mr. Chaz Roberts
Mr. Ryan Mitchell



Point	Probe Name
#60	GP-2
#62	GP-4
#76	GP-17
#77	GP-18
#79	GP-19
#80	GP-20
#81	GP-21
#82	GP-22
#83	GP-23
#84	GP-24

SCS ENGINEERS
environmental consultants and contractors

New LFG Monitoring Points

Legend

- Location of New Gas Probes Installation
- Monitoring Well
- Approximate Proposed Relocation of Unnamed Tributary to Silver Creek
- Cell Boundary
- Proposed Expansion Waste Boundary
- Located Waste Boundary
- Approximate Waste Boundary
- Future Waste Boundary
- Current Property Boundary

Loess Hills Regional Sanitary Landfill
Malvern, Iowa
Project No: 27224624.00
Drawing Date: January 2024

N W E S

0 170 340 680 1,020 Feet

Figure 1

LOG OF GAS PROBE NO. GP-2

Date: 12/11/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 12:00 PM

Helper: Charles Adams Boring Completed: 1:40 PM Station:

Logged By: Cole Tesar Well Started: 1:40 PM Offset:

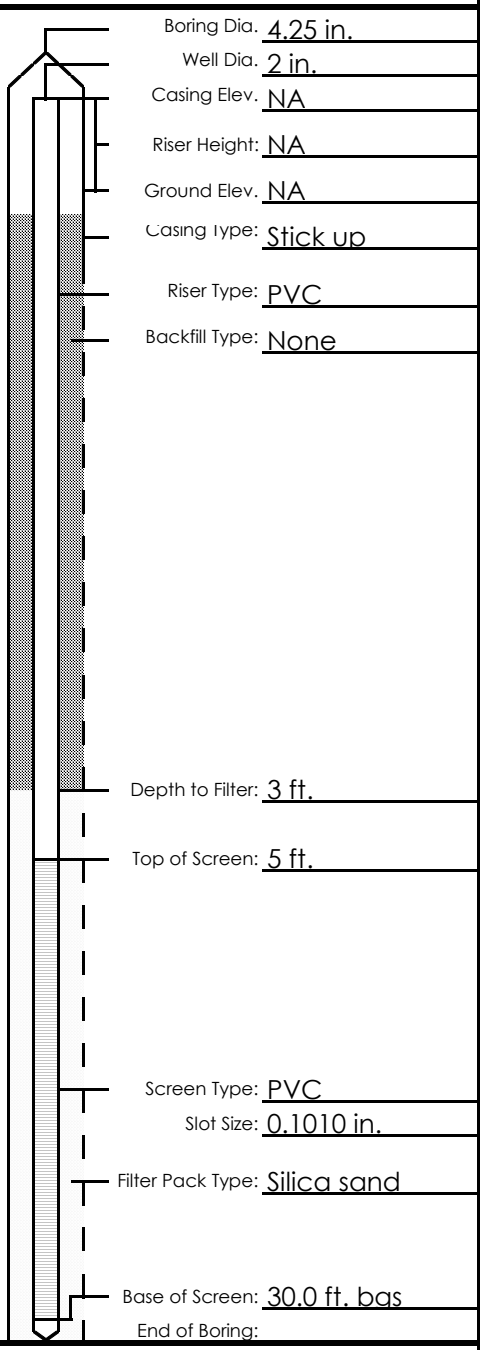
Drill Rig: Well Completed: 2:00 PM

NOT TO SCALE

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silt, light brown
							Silty clay, brown
1	30	G					
							End of boring



Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 30.0 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-4

Date: 12/11/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 1:45 PM

Helper: Charles Adams Boring Completed: 3:00 PM Station:

Logged By: Cole Tesar Well Started: 3:00 PM Offset:

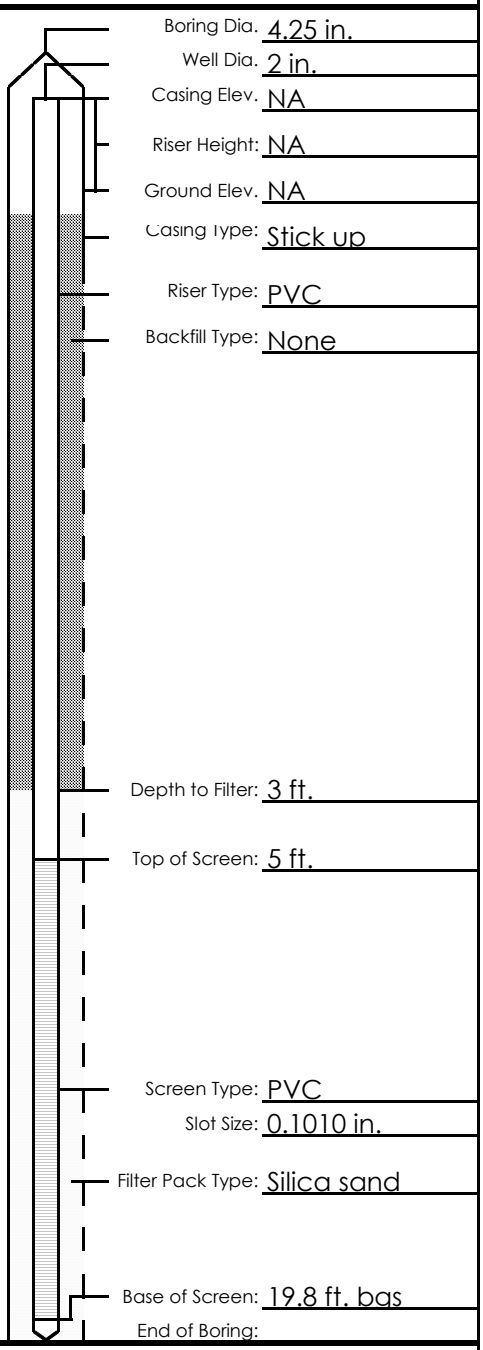
Drill Rig: Well Completed: 3:20 PM

NOT TO SCALE

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silty clay, brown
							Silty clay, dark brown
1	20	G					
							End of boring

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-17

Date: 12/12/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 11:45 AM

Helper: Charles Adams Boring Completed: 12:50 PM Station:

Logged By: Cole Tesar Well Started: 12:20 PM Offset:

Drill Rig: Well Completed: 1:05 PM

NOT TO SCALE

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
							Silty clay, brown
0	34	G					
							End of boring

Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 34.0 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-18

Date: 12/12/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 1:40 PM

Helper: Charles Adams Boring Completed: 2:40 PM Station:

Logged By: Cole Tesar Well Started: 2:40 PM Offset:

Drill Rig: Well Completed: 3:30 PM

NOT TO SCALE

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silty clay, brown
							Silty sand, brown
1	55	G					
							End of boring

Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 54.7 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: 53 ft. bgs WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-19

Date: 12/12/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 10:00 AM

Helper: Charles Adams Boring Completed: 11:15 AM Station:

Logged By: Cole Tesar Well Started: 11:15 AM Offset:

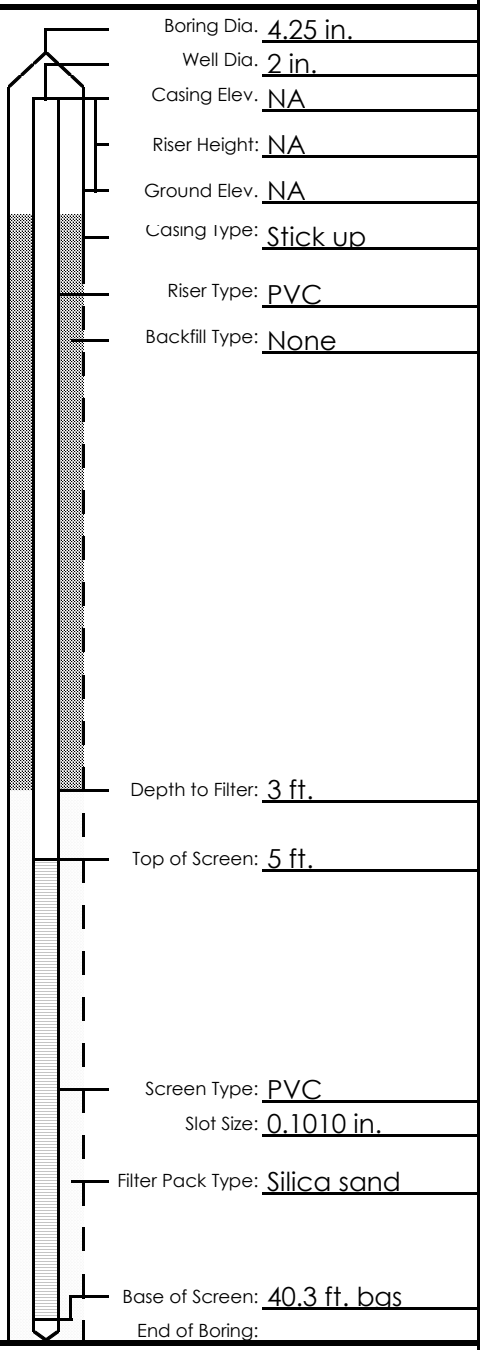
Drill Rig: Well Completed: 11:30 AM

NOT TO SCALE

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silty clay, brown
1	40	G					Silty clay, brown
							End of boring

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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West Des Moines, Iowa 50265

LOG OF GAS PROBE NO. GP-20

Date: 12/11/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 10:35 AM

Helper: Charles Adams Boring Completed: 11:10 AM Station:

Logged By: Cole Tesar Well Started: 11:10 AM Offset:

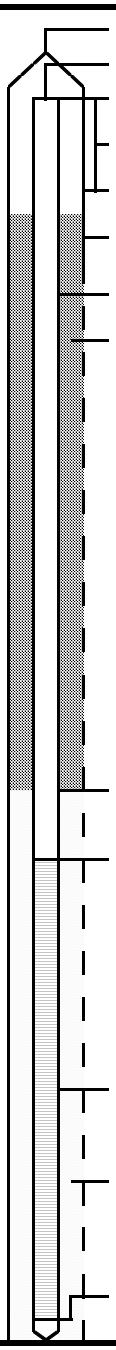
Drill Rig: Well Completed: 11:25 AM

NOT TO SCALE

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silt, light brown
							Silty clay, brown
1	30	G					
							End of boring

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core



Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 30.0 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-21

Date: 12/11/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 9:30 AM

Helper: Charles Adams Boring Completed: 10:00 AM Station:

Logged By: Cole Tesar Well Started: 10:00 AM Offset:

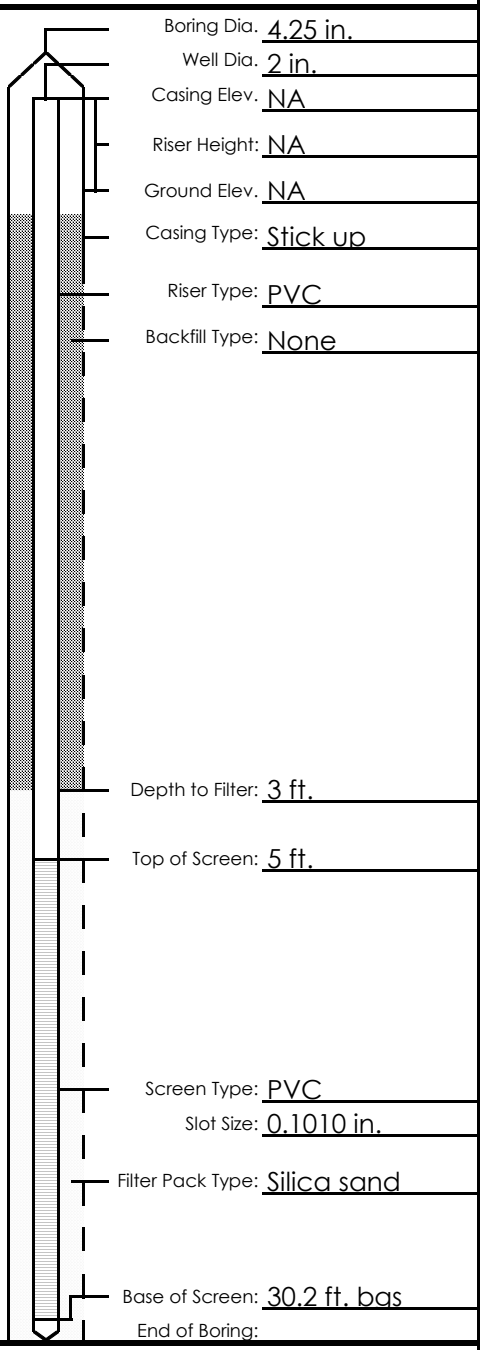
Drill Rig: Well Completed: 10:30 AM

NOT TO SCALE

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
							Silty clay, brown
0	30	G					
							End of boring



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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LOG OF GAS PROBE NO. GP-22

Date: 12/10/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 2:00 PM

Helper: Charles Adams Boring Completed: 2:30 PM Station:

Logged By: Cole Tesar Well Started: 2:30 PM Offset:

Drill Rig: Well Completed: 3:00 PM

NOT TO SCALE

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silty clay, light brown
1	30	G					Silty clay, brown
							End of boring

Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 30.0 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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West Des Moines, Iowa 50265

LOG OF GAS PROBE NO. GP-23

Date: 12/10/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 12:30 PM

Helper: Charles Adams Boring Completed: 1:15 PM Station:

Logged By: Cole Tesar Well Started: 1:15 PM Offset:

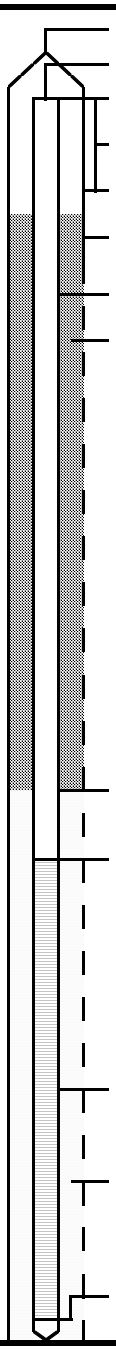
Drill Rig: Well Completed: 1:45 PM

NOT TO SCALE

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	1	G					Silt, dry, light brown
							Silty clay, brown
1	30	G					
							End of boring

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core



Boring Dia. 4.25 in.
Well Dia. 2 in.
Casing Elev. NA
Riser Height: NA
Ground Elev. NA
Casing Type: Stick up
Riser Type: PVC
Backfill Type: None
Depth to Filter: 3 ft.
Top of Screen: 5 ft.
Screen Type: PVC
Slot Size: 0.1010 in.
Filter Pack Type: Silica sand
Base of Screen: 30.4 ft. bgs
End of Boring:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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West Des Moines, Iowa 50265

LOG OF GAS PROBE NO. GP-24

Date: 12/10/2024 Sheet: 1 of: 1

Job Name: Loess Hills LFG Monitoring Points Job Number: 27224624.00

Driller: Conner O'Malley Boring Started: 10:30 AM

Helper: Charles Adams Boring Completed: 11:30 AM Station:

Logged By: Cole Tesar Well Started: 11:30 AM Offset:

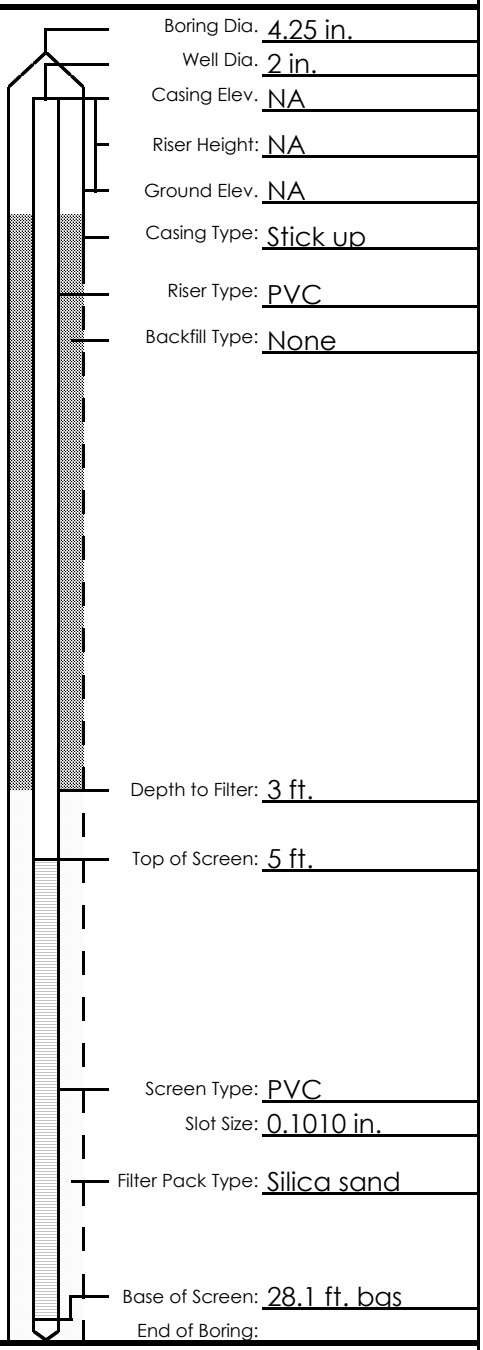
Drill Rig: Well Completed: 12:10 PM

NOT TO SCALE

Sampling Depth From	Sampling Depth To	Sampling Method	Penetration Split Spoon Blows 6"	6"	6"	Recovery %	General Description
0	5	G					Silty clay, brown
							Silty clay, brown, moist
5	28	G					End of boring

Abbreviations

A - Solid Auger SS - Split Spoon WB - Wash Bore
HS - Hollow Auger ST - Thin-Walled RB - Rock Bit
HA - Hand Auger G - Auger Grab NX - Rock Core



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL

WATER LEVEL OBSERVATIONS

WL: WD

WL: AB Hrs. After

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West Des Moines, Iowa 50265