



1150 Northmeadow Parkway
Suite 100
Roswell GA 30076
(770) 594-5998
www.atlcc.net

September 25, 2023

Transmitted via GEOS
Submittal ID: 787898

Mr. David DuBose, P.G.
Georgia Department of Natural Resources
Environmental Protection Division
Solid Waste Management Program
4244 International Parkway, Suite 104
Atlanta, Georgia 30354

RE: Periodic Monitoring Report – Third Quarter 2023
Forsyth County-Hightower Road Landfill
Solid Waste Permit Nos.: 058-006D(SL), 058-009D(SL), & 058-010D(SL)
Forsyth County

Dear Mr. DuBose:

Atlantic Coast Consulting, Inc. (ACC) is providing Georgia Department of Natural Resources, Environmental Protection Division (EPD) this Methane Monitoring Report for the closed Hightower Road Solid Waste Landfill. Perimeter monitoring was conducted September 21, 2023, with procedures in accordance with the facility's approved methane monitoring plan. Attached is the SWM-19 form and recent potentiometric map. The monitoring well methane concentrations were reported as being less than 5 percent methane by volume during this monitoring event and the methane concentration in the facility structure was less than 1.25 percent methane by volume.

A copy of this report will be placed in the Operating Record. Please contact me or Sam Buckles with Forsyth County if you have any questions regarding this report.

Thank you,

ATLANTIC COAST CONSULTING, INC.

Charles Adams, P.G.
Project Manager

Attachments

cc: Samuel Buckles with attachments via email.
EPD Mountain District, Cartersville cover letter only via Regular mail.
Operating Record via FedEx: 773528769194

SWM-19 FORM
AND
POTENTIOMETRIC MAP



Periodic Methane Monitoring Report

Third Quarter / 2023

Quarter or Month / Year

| | | | |
|------------------------------|----------------------------|---|-----------|
| Facility Name: | Hightower Road Landfill | Date(s) of Monitoring: | 9/21/2023 |
| Facility Permit #'s: | 058-006D(SL), 058-009D(SL) | Monitoring Conducted by: | C. Klamke |
| Permit #'s (cont): | 058-010D(SL) | Equipment Field Calibrated by: | C. Klamke |
| County (Location): | Forsyth | Date of Field Calibration: | 9/21/2023 |
| Monitoring Equipment: | GX 2012 | Manufacturer Calibration/Service Date: | 7/26/2023 |

1. All reports must include a scaled and dated potentiometric surface map, (this applies only to those facilities required to perform groundwater monitoring) that shows ALL monitoring points, accompanied by a table listing the as-built depths and corresponding elevations of the bottoms of the methane monitoring wells and/or barhole punches. The potentiometric surface maps must be updated on an annual basis, and signed & sealed by a qualified groundwater scientist. Those facilities that do not conduct groundwater monitoring should, at a minimum, include a site map that shows ALL monitoring locations.

2. All reports must specify whether each monitoring location is a structure, permanent well, barhole punch, or vent (e.g. MM-1=scalehouse, MM-1=well, MM-1=BHP (barhole punch), MM-1=vent, or GWC-1=groundwater well).

3. Monitoring Results

a. Permanent Approved COMPLIANCE Monitoring Locations

| <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> | <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> |
|--|---|--|---|
| MM-1R Well | % Methane By Volume: 0.0% % Oxygen: 19.5% Time Sampled: 15:15 | MM-6 Well | % Methane By Volume: 0.0% % Oxygen: 19.0% Time Sampled: 12:54 |
| MM-2 Well | % Methane By Volume: 0.0% % Oxygen: 20.9% Time Sampled: 12:41 | MM-7 Well | % Methane By Volume: 0.0% % Oxygen: 20.9% Time Sampled: 13:06 |
| MM-3 Well | % Methane By Volume: 0.0% % Oxygen: 19.6% Time Sampled: 15:36 | MM-8 Well | % Methane By Volume: 0.0% % Oxygen: 20.7% Time Sampled: 13:12 |
| MM-4 Well | % Methane By Volume: 0.0% % Oxygen: 20.9% Time Sampled: 15:22 | MM-9 Well | % Methane By Volume: 0.0% % Oxygen: 19.5% Time Sampled: 13:20 |
| MM-5 Well | % Methane By Volume: 0.0% % Oxygen: 18.8% Time Sampled: 14:25 | MM-10 Well | % Methane By Volume: 0.0% % Oxygen: 19.5% Time Sampled: 13:27 |

a. Permanent Approved COMPLIANCE Monitoring Locations (continued)

| <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> | | <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> | |
|--|---------------------------|-------|--|---------------------------|-------|
| MM-11R | % Methane By Volume: | 0.0% | MM-14 | % Methane By Volume: | 0.0% |
| BHP | % Oxygen: | 20.9% | Well | % Oxygen: | 20.9% |
| | Time Sampled: | 15:06 | | Time Sampled: | 14:10 |
| MM-13 | % Methane By Volume: | 0.0% | MM-15 | % Methane By Volume: | 0.0% |
| Well | % Oxygen: | 20.9% | Well | % Oxygen: | 20.9% |
| | Time Sampled: | 14:16 | | Time Sampled: | 14:06 |

b. Facility Structures (All on-site structures must be monitored, listed, and shown on map.)

| <u>Facility Structure</u> | <u>Monitoring Results</u> | | <u>Facility Structure</u> | <u>Monitoring Results</u> | |
|---------------------------|---------------------------|-------|---------------------------|---------------------------|-------|
| Tool Shed | % LEL: | 0.0% | N/A | % LEL: | _____ |
| | % Methane by Volume: | 0.0% | | % Methane by Volume: | _____ |
| | % Oxygen: | 20.9% | | % Oxygen: | _____ |
| | Time Sampled: | 14:36 | | Time Sampled: | _____ |

c. Miscellaneous Monitoring Locations (vents, trenches not part of compliance monitoring)

| <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> | | <u>Monitoring Point Identification</u> | <u>Monitoring Results</u> | |
|--|---------------------------|-------|--|---------------------------|-------|
| MV-11 | % Methane By Volume: | 0.0% | N/A | % Methane By Volume: | _____ |
| Vent | % Oxygen: | 20.9% | | % Oxygen: | _____ |
| | Time Sampled: | 13:42 | | Time Sampled: | _____ |

d. Adjacent Off-Site Structures (off-site structures at facilities with known release)

| <u>Off-Site Structure</u> | <u>Monitoring Results</u> | | <u>Off-Site Structure</u> | <u>Monitoring Results</u> | |
|---------------------------|---------------------------|-------|---------------------------|---------------------------|-------|
| N/A | % LEL: | _____ | N/A | % LEL: | _____ |
| | % Methane by Volume: | _____ | | % Methane by Volume: | _____ |
| | % Oxygen: | _____ | | % Oxygen: | _____ |
| | Time Sampled: | _____ | | Time Sampled: | _____ |

4. Climatic/Physical Conditions at Site

Samples must be collected under normal/average conditions of temperature, pressure, and climate for the season. Barhole punch sampling should not be performed during or immediately after rain events, or when soils are saturated or frozen. All sampling at compliance monitoring locations must be performed after 12:00 pm, and completed by 6:00 pm. Barometric information can be obtained from many locations.

(i.e. <http://weather.noaa.gov>)

- a. Soil Conditions: Normal
- b. Weather Conditions: Partly Cloudy
- c. Temperature: 76 ° F
- d. Barometric Conditions: Rising _____ Falling X Steady _____ Reading: 30.23
- e. Relative Humidity 10-90%? Yes X No _____ Range: 43-51%
- f. Condition/Access: Sampling points are properly identified, secured, and maintained?
Yes _____ No X

If no, please list deficiencies observed:

g. If stressed vegetation due to the presence of methane gas is noted, describe the extent and location in the space provided below.

Vegetation is not stressed.

5. Description of Sampling Techniques: Provide a clear and concise description for each type of sampling (well, barhole punch, structure, etc.) performed during the monitoring event. Wells are NOT to be vented; peak readings should be reported. Any exceptions should be noted here.

Wells were not vented prior to taking the sample and are equipped with quick-connect sample ports.
The instrument was allowed to pump the sample for 3 minutes until the oxygen reading stabilized
and the peak reading was recorded.

6. Additional Comments

Event attended by Samuel B. Buckles, Environmental Scientist Manager, Forsyth County
Recycling & Solid Waste Department

CERTIFICATION

I CERTIFY that all required information on this form is complete and accurate, and

I further CERTIFY that methane sampling was conducted by myself or my authorized representative in accordance with all applicable rules and current EPD guidance. Concentrations of methane detected during this sampling/monitoring event do / X do not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures (excluding the gas recovery system components), and gas concentrations do / X do not exceed the LEL for methane at the approved compliance monitoring locations.

(IF THIS STATEMENT IS NOT SIGNED OR THE FORM IS ALTERED, THE DIVISION WILL NOT ACCEPT THE RESULTS FROM THE SUBJECT FACILITY.)



(Signature)

Professional Geologist # 1632

(Title)

25-Sep-2023

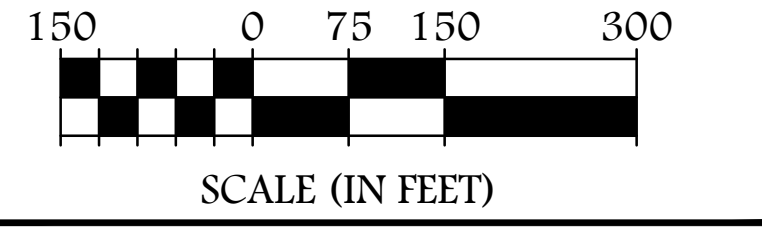
(Date)

Charles Adams, 1150 Northmeadow Pkwy., Suite 100, Roswell, GA 30076, (770) 594-5998

(Typed Name, Address, and Telephone Number)



ATLANTIC COAST CONSULTING, INC.
770-594-5998
www.atlcc.net
Roswell, GA
Savannah, GA
Knoxville, TN



| SUMMARY OF GROUNDWATER ELEVATION DATA FORSYTH COUNTY - HIGHTOWER ROAD MSWLF JUNE 2023 SAMPLING EVENT | | | | |
|--|----------------------------|------------------------|--------------------------------|--------------------------------|
| MONITORING WELL ID | TOTAL WELL DEPTH (FT BTOC) | TOC ELEVATION (FT MSL) | DEPTH TO WATER LEVEL (FT BTOC) | GROUNDWATER ELEVATION (FT MSL) |
| PHASE I GROUNDWATER ELEVATION DATA | | | | |
| PH1-GWA-1 | 48.66 | 1176.37 | 37.25 | 1139.12 |
| PH1-GWA-1A | 108 | 1176.35 | 38.52 | 1137.83 |
| PH1-GWA-2 | 53.6 | 1183.4 | 35.55 | 1147.85 |
| PH1-GWA-3A | 250 | 1187.16 | 35.46 | 1151.70 |
| PH1-GWA-4 | 57 | 1191.14 | 34.93 | 1156.21 |
| PH1-GWB-1 | 53.8 | 1179.1 | 41.54 | 1137.56 |
| PH1-GWB-2 | 42.22 | 1155.04 | 24.30 | 1130.74 |
| PH1-GWC-1 | 23.79 | 1074.66 | 9.70 | 1064.96 |
| PH1-GWC-2 | 127.61 | 1103.93 | 22.66 | 1081.27 |
| PH1-GWC-3 | 23.42 | 1096.96 | 11.72 | 1085.24 |
| PH1-GWC-3A | 55.42 | 1096.28 | 10.86 | 1085.42 |
| PH1-GWC-4 | 33.71 | 1124.26 | 28.52 | 1095.74 |
| GWC-1 | 38.8 | 1102.25 | 28.19 | 1074.06 |
| GWC-2 | 50.4 | 1186.23 | 38.50 | 1147.73 |
| GWC-3 | 41.69 | 1162.64 | 30.59 | 1132.05 |
| GWC-4 | 56.81 | 1180.73 | 42.61 | 1138.12 |
| GWC-5 | 39.71 | 1103.64 | 45.02 | 1058.62 |
| GWC-6 | 34.52 | 1064.01 | 25.22 | 1038.79 |
| GWC-7 | 54.21 | 1093.44 | 40.63 | 1052.81 |
| GWC-8 | 27.53 | 1095.63 | 20.45 | 1075.18 |
| GWC-9 | 60.50 | 1093.58 | 45.49 | 1048.09 |
| GWC-10 | 37.51 | 1068.56 | 21.72 | 1046.84 |
| GWC-10A | 54.30 | 1066.45 | 23.71 | 1042.74 |
| GWC-11 | 46.80 | 1054.08 | 32.48 | 1021.60 |
| GWC-12 | 40.06 | 1038.06 | 28.54 | 1009.52 |
| GWC-12A | 49.44 | 1038.09 | 29.70 | 1008.39 |
| GWC-13 | 44.95 | 1090.82 | 30.75 | 1060.07 |
| GWC-14 | 28.37 | 1089.49 | 23.10 | 1066.39 |
| GWC-14A | 64.75 | 1089.32 | 22.35 | 1066.97 |
| GWC-14R | 93.61 | 1078.60 | 13.25 | 1065.35 |
| GWC-15 | 62.84 | 1125.68 | 56.10 | 1069.58 |
| GWC-16A | 51.05 | 1136.49 | 49.80 | 1086.69 |
| GWC-17 | 21.59 | 1107.78 | 14.08 | 1093.70 |
| GWC-18 | 52.70 | 1094.87 | 40.67 | 1054.20 |
| GWC-19R | 39.87 | 1105.79 | 27.66 | 1078.13 |
| GWC-22 | 35.05 | 1079.01 | 21.96 | 1057.05 |
| GWC-23 | 32.22 | 1079.06 | 17.26 | 1061.80 |
| GWC-23A | 61.67 | 1079.10 | 14.91 | 1064.19 |
| GWC-24 | 44.09 | 1102.32 | 34.14 | 1068.18 |
| AMW-1 | 180.70 | 1130.04 | 60.01 | 1070.03 |
| AMW-2 | 150.00 | 1101.96 | 39.57 | 1062.39 |
| AMW-3 | 31.30 | 1041.09 | 9.99 | 1031.10 |
| AMW-4 | 18.80 | 1040.09 | 4.47 | 1035.62 |
| AMW-5 | 23.06 | 1049.32 | 8.47 | 1040.85 |
| AMW-11R | 58.10 | 1053.63 | 8.85 | 1044.78 |
| AMW-12 | 19.56 | 1056.85 | 7.75 | 1049.10 |
| AMW-12R | 46.43 | 1056.34 | 10.01 | 1046.33 |
| AMW-13 | 36.18 | 1093.09 | 29.74 | 1063.35 |
| AMW-14 | 21.70 | 1052.73 | 9.96 | 1042.77 |

| PHASE II, III, AND IV GROUNDWATER ELEVATION DATA | | | | |
|--|----------------------------|------------------------|--------------------------------|--------------------------------|
| MONITORING WELL ID | TOTAL WELL DEPTH (FT BTOC) | TOC ELEVATION (FT MSL) | DEPTH TO WATER LEVEL (FT BTOC) | GROUNDWATER ELEVATION (FT MSL) |
| GWA-1 | 62.85 | 1187.70 | 55.01 | 1132.69 |
| GWA-1A | 141.00 | 1187.49 | 55.93 | 1131.56 |
| GWA-2 | 52.18 | 1137.30 | 38.77 | 1098.53 |
| GWA-3 | 48.86 | 1154.53 | 38.74 | 1115.79 |
| GWA-4 | 55.61 | 1103.64 | 45.02 | 1058.62 |
| GWA-5 | 39.71 | 1103.39 | 33.52 | 1069.87 |
| GWA-6 | 68.95 | 1094.67 | 31.73 | 1062.94 |
| GWA-7 | 49.81 | 1132.82 | 43.55 | 1089.27 |
| GWA-8 | 89.23 | 1132.39 | 40.36 | 1092.03 |
| GWA-9 | 49.91 | 1084.55 | 45.63 | 1038.92 |
| GWA-10 | 34.52 | 1064.01 | 25.22 | 1038.79 |
| GWA-11 | 54.21 | 1093.44 | 40.63 | 1052.81 |
| GWA-12 | 27.53 | 1095.63 | 20.45 | 1075.18 |
| GWA-13 | 46.71 | 1095.44 | 19.50 | 1075.94 |
| GWA-14 | 94.67 | 1098.40 | 22.29 | 1076.11 |
| GWA-15 | 60.50 | 1093.58 | 45.49 | 1048.09 |
| GWA-16 | 37.51 | 1068.56 | 21.72 | 1046.84 |
| GWA-17 | 54.30 | 1066.45 | 23.71 | 1042.74 |
| GWA-18 | 46.80 | 1054.08 | 32.48 | 1021.60 |
| GWA-19 | 40.06 | 1038.06 | 28.54 | 1009.52 |
| GWA-20 | 49.44 | 1038.09 | 29.70 | 1008.39 |
| GWA-21 | 44.95 | 1090.82 | 30.75 | 1060.07 |
| GWA-22 | 28.37 | 1089.49 | 23.10 | 1066.39 |
| GWA-23 | 64.75 | 1089.32 | 22.35 | 1066.97 |
| GWA-24 | 93.61 | 1078.60 | 13.25 | 1065.35 |
| GWA-25 | 62.84 | 1125.68 | 56.10 | 1069.58 |
| GWA-26 | 51.05 | 1136.49 | 49.80 | 1086.69 |
| GWA-27 | 21.59 | 1107.78 | 14.08 | 1093.70 |
| GWA-28 | 52.70 | 1094.87 | 40.67 | 1054.20 |
| GWA-29 | 39.87 | 1105.79 | 27.66 | 1078.13 |
| GWA-30 | 35.05 | 1079.01 | 21.96 | 1057.05 |
| GWA-31 | 32.22 | 1079.06 | 17.26 | 1061.80 |
| GWA-32 | 61.67 | 1079.10 | 14.91 | 1064.19 |
| GWA-33 | 44.09 | 1102.32 | 34.14 | 1068.18 |
| GWA-34 | 180.70 | 1130.04 | 60.01 | 1070.03 |
| GWA-35 | 150.00 | 1101.96 | 39.57 | 1062.39 |
| GWA-36 | 31.30 | 1041.09 | 9.99 | 1031.10 |
| GWA-37 | 18.80 | 1040.09 | 4.47 | 1035.62 |
| GWA-38 | 23.06 | 1049.32 | 8.47 | 1040.85 |
| GWA-39 | 58.10 | 1053.63 | 8.85 | 1044.78 |
| GWA-40 | 19.56 | 1056.85 | 7.75 | 1049.10 |
| GWA-41 | 46.43 | 1056.34 | 10.01 | 1046.33 |
| GWA-42 | 36.18 | 1093.09 | 29.74 | 1063.35 |
| GWA-43 | 21.70 | 1052.73 | 9.96 | 1042.77 |

LEGEND

| EXISTING | DESCRIPTION |
|----------|----------------------------------|
| 850 | PROMINENT CONTOUR |
| --- | INTERMEDIATE CONTOUR |
| --- | PROPERTY BOUNDARY |
| --- | APPROXIMATE LIMIT OF WASTE |
| --- | SURFACE WATER/POND |
| --- | GROUNDWATER CONTOUR |
| --- | GROUNDWATER FLOW DIRECTION |
| ● | GROUNDWATER MONITORING WELL |
| 1002.23 | ELEVATION IN FEET MEAN SEA LEVEL |
| ▼ | SURFACE WATER MONITORING POINT |
| □ | METHANE MONITORING POINT |
| ○ | METHANE VENT |
| --- | METHANE VENT TRENCH |
| ○ | EXTRACTION POINT WITH FLARE |

NOTES

- SURVEY IS PROVIDED BY APPALACHIAN SURVEYING COMPANY IN CUMMING, GEORGIA DATED JANUARY AND APRIL 1998. CONTROL POINT COORDINATES WERE TAKEN FROM THESE SURVEYS.
- WELL AND PROBE LOCATIONS ARE APPROXIMATE AND BASED ON W.L. JORDEN & CO. DRAWINGS DATED MARCH 3, 1996.
- GWA-1A*, GWC-4A*, GWC-23A*, AMW-2* AND AMW-10* ARE NOT USED FOR POTENTIOMETRIC CONTOURS.
- POTENTIOMETRIC CONTOUR INTERVAL IS 10 FEET.
- DEPTHS TO GROUNDWATER MEASURED BY ATLANTIC COAST CONSULTING, INC. JUNE 19, 2023.

REVISIONS

| | |
|------------------|------------|
| 0. INITIAL ISSUE | 09/01/2023 |
|------------------|------------|

PROJECT

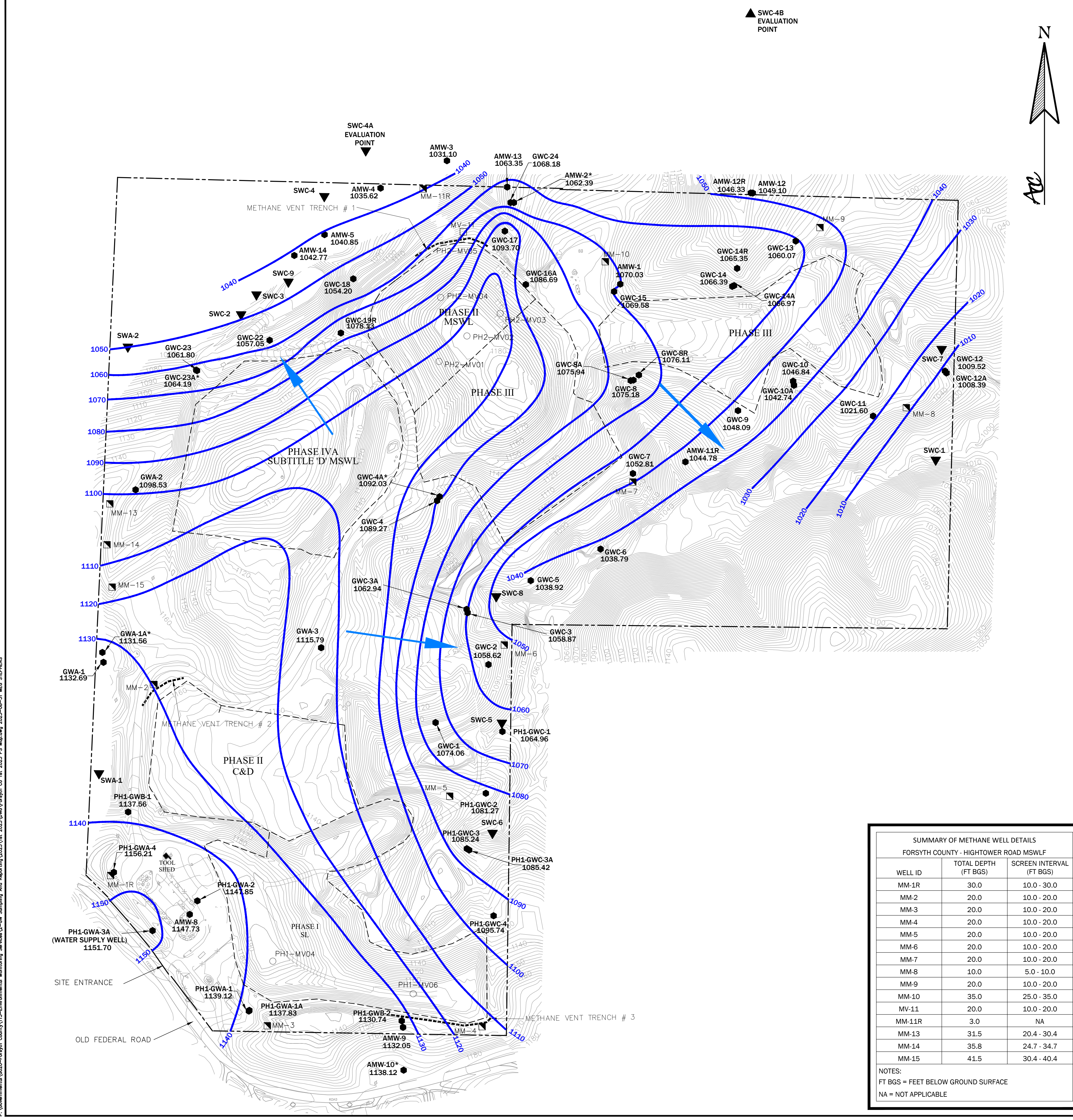


FORSYTH COUNTY
HIGHTOWER ROAD LANDFILL

POTENTIOMETRIC
SURFACE MAP
JUNE 2023

| | | |
|-----------------|-------------------|---------------|
| Drawn by: AS | Checked by: CA | QC by: JPS |
|-----------------|-------------------|---------------|

| | |
|-----------------------------|--------------|
| PROJECT NUMBER: G020-113 | FIGURE: 1 |
|-----------------------------|--------------|



SUMMARY OF METHANE WELL DETAILS
FORSYTH COUNTY - HIGHTOWER ROAD MSWLF

| WELL ID | TOTAL DEPTH (FT BGS) | SCREEN INTERVAL (FT BGS) |
|---------|----------------------|--------------------------|
| MM-1R | 30.0 | 10.0 - 30.0 |
| MM-2 | 20.0 | 10.0 - 20.0 |
| MM-3 | 20.0 | 10.0 - 20.0 |
| MM-4 | 20.0 | 10.0 - 20.0 |
| MM-5 | 20.0 | 10.0 - 20.0 |
| MM-6 | 20.0 | 10.0 - 20.0 |
| MM-7 | 20.0 | 10.0 - 20.0 |
| MM-8 | 10.0 | 5.0 - 10.0 |
| MM-9 | 20.0 | 10.0 - 20.0 |
| MM-10 | 35.0 | 25.0 - 35.0 |
| MV-11 | 20.0 | 10.0 - 20.0 |
| MM-11R | 3.0 | NA |
| MM-13 | 31.5 | 20.4 - 30.4 |
| MM-14 | 35.8 | 24.7 - 34.7 |
| MM-15 | 41.5 | 30.4 - 40.4 |

NOTES:
FT BGS = FEET BELOW GROUND SURFACE
NA = NOT APPLICABLE

P:\Governmental\0200-Forsyth County\113-Environmental Monitoring Services\2-Off Sampling and Reporting\2023\113-2023\GWS\Forsyth Co. 113-2023 PS Map.dwg 2023-06-31 MEG STEPHENS