ATLANTIC COAST CONSULTING, INC.

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March 26, 2021

Transmitted via GEOS
Submittal ID: 559957

Mr. John Sayer
Georgia Department of Natural Resources
Environmental Protection Division
Solid Waste Management Program
4244 International Parkway, Suite 104
Atlanta, Georgia 30354

RE: Periodic Monitoring Report – First Quarter 2021
Forsyth County-Hightower Road Landfill
Solid Waste Permit Nos.: 058-006D(SL), 058-009D(SL), & 058-010D(SL)
Forsyth County

Dear Mr. Sayer:

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 March 24, 2021 with procedures in accordance with the facility's approved methane monitoring plan and the June 19, 2020 Methane Remediation 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.

The new solar powered flare/blower unit has been installed at Trench Vent #1. Construction was completed December 23, 2020. The new flare (designated as PH2-MV05) location is depicted on the potentiometric map. Monthly methane monitoring will continue in accordance with the MRP until there are 6 events without methane above compliance limits. This event marks the fourth consecutive month with MM-11R methane readings below the lower explosive limit (LEL). A copy of this report will be placed in the Operating Record. Please contact me 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: 773275205142

SWM-19 FORM

AND

POTENTIOMETRIC MAP

Periodic Methane Monitoring Report

Quarter 1 / 2021

Quarter or Month / Year

Facility Name:	Hightower Road Landfill	**Date(s) of Monitoring:**	3/24/2021
Facility Permit #'s:	058-006D(SL), 058-009D(SL)	**Monitoring Conducted by:**	D.Davis
Permit #'s (cont):	058-010D(SL)	**Equipment Field Calibrated by:**	D.Davis
County (Location):	Forsyth	**Date of Field Calibration:**	3/24/2021
Monitoring Equipment:	GEM 5000	**Manufacturer Calibration/Service Date:**	4/17/2021

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

Monitoring Point Identification	Monitoring Results		Monitoring Point Identification	Monitoring Results	
MM-1R	% Methane By Volume:	0.0%	**MM-6**	% Methane By Volume:	0.0%
Well	% Oxygen:	18.4%	Well	% Oxygen:	20.0%
	Time Sampled:	12:39		Time Sampled:	13:32
MM-2	% Methane By Volume:	0.0%	**MM-7**	% Methane By Volume:	0.0%
Well	% Oxygen:	18.2%	Well	% Oxygen:	19.7%
	Time Sampled:	13:03		Time Sampled:	14:02
MM-3	% Methane By Volume:	0.0%	**MM-8**	% Methane By Volume:	0.0%
Well	% Oxygen:	17.0%	Well	% Oxygen:	18.9%
	Time Sampled:	12:45		Time Sampled:	14:09
MM-4	% Methane By Volume:	0.0%	**MM-9**	% Methane By Volume:	0.0%
Well	% Oxygen:	18.9%	Well	% Oxygen:	19.2%
	Time Sampled:	12:52		Time Sampled:	14:15
MM-5	% Methane By Volume:	0.0%	**MM-10**	% Methane By Volume:	0.0%
Well	% Oxygen:	18.1%	Well	% Oxygen:	15.6%
	Time Sampled:	13:08		Time Sampled:	14:21

a. Permanent Approved COMPLIANCE Monitoring Locations (continued)

Monitoring Point Identification	Monitoring Results		Monitoring Point Identification	Monitoring Results	
MM-11R	% Methane By Volume:	0.0%	**MM-14**	% Methane By Volume:	0.0%
BHP	% Oxygen:	20.0%	Well	% Oxygen:	19.8%
	Time Sampled:	14:35		Time Sampled:	13:19
MM-13	% Methane By Volume:	0.0%	**MM-15**	% Methane By Volume:	0.0%
Well	% Oxygen:	19.2%	Well	% Oxygen:	20.9%
	Time Sampled:	13:24		Time Sampled:	13:13

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

Facility Structure	Monitoring Results		Facility Structure	Monitoring Results	
Tool Shed	% LEL:	0.0%	N/A	% LEL:	
	% Methane by Volume:	0.0%		% Methane by Volume:	
	% Oxygen:	20.8%		% Oxygen:	
	Time Sampled:	12:58		Time Sampled:	

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

Monitoring Point Identification	Monitoring Results		Monitoring Point Identification	Monitoring Results	
MV-11	% Methane By Volume:	0.0%	N/A	% Methane By Volume:	
Vent	% Oxygen:	20.9%		% Oxygen:	
	Time Sampled:	14:28		Time Sampled:	

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

Off-Site Structure	Monitoring Results		Off-Site Structure	Monitoring Results	
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: Cloudy
c. Temperature: 66
d. Barometric Conditions: Rising ____ Falling ____ Steady **X** Reading: 28.91
e. Relative Humidity 10-90%? Yes **X** No ____ Range: 28-29
f. Condition/Access: Sampling points are properly identified, secured, and maintained?
Yes **X** No ____

If no, please list deficiencies observed:
All points are properly marked with proper access

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

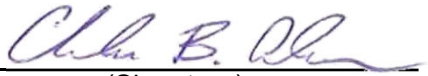
Sam Buckles (Environmental Scientist Manager) of Forsyth County attended the monitoring event.

CERTIFICATION

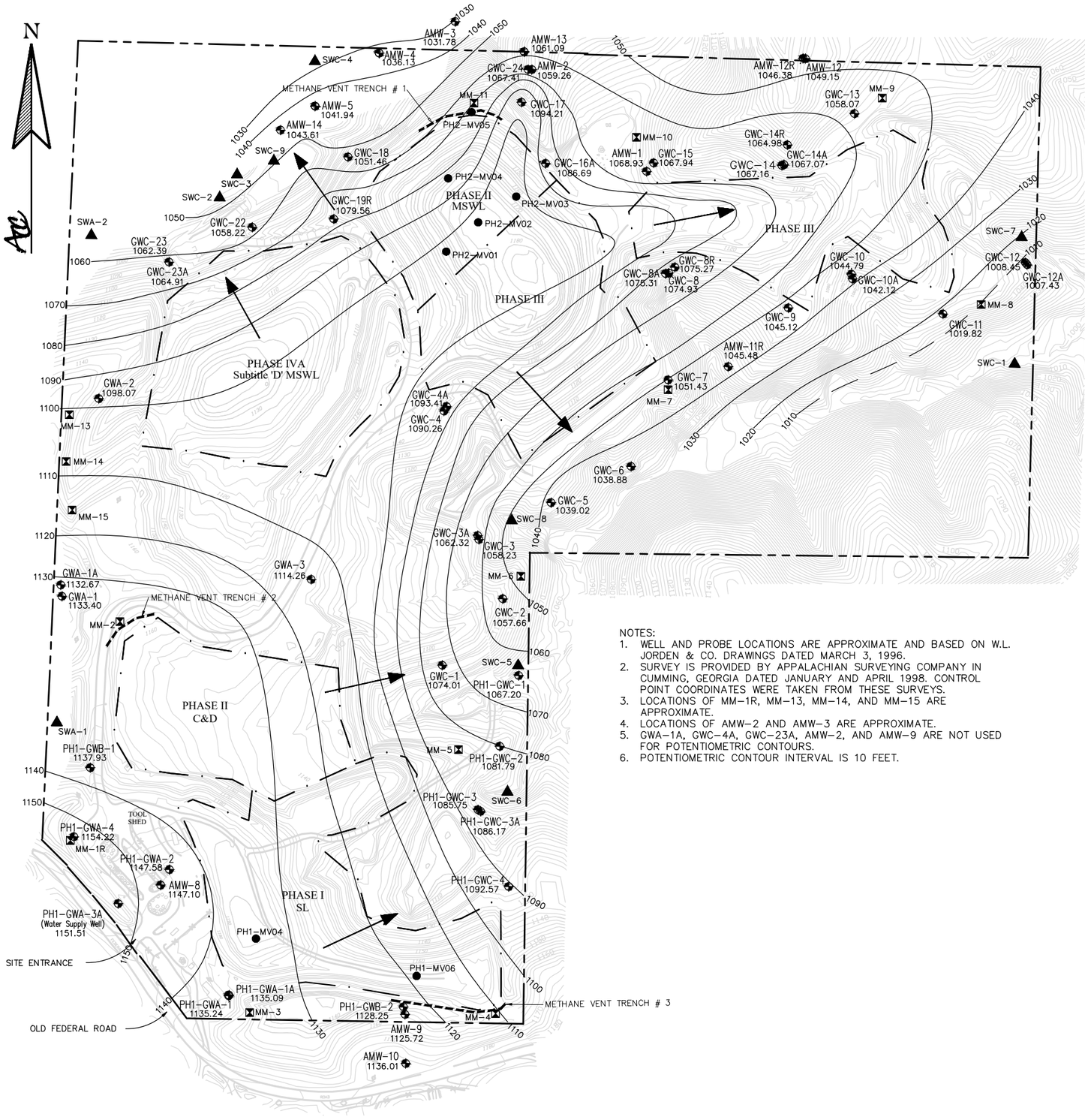
I CERTIFY that all required information on this form is complete and accurate, and

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.)

	Professional Geologist P.G. 1632	25-Mar-2021
(Signature)	(Title)	(Date)

Charles B. Adams, 1150 Northmeadow Parkway, Suite 100, Roswell GA 30076, 770-594-5998
(Typed Name, Address, and Telephone Number)



NOTES:
1. WELL AND PROBE LOCATIONS ARE APPROXIMATE AND BASED ON W.L. JORDEN & CO. DRAWINGS DATED MARCH 3, 1996.
2. SURVEY IS PROVIDED BY APPALACHIAN SURVEYING COMPANY IN CUMMING, GEORGIA DATED JANUARY AND APRIL 1998. CONTROL POINT COORDINATES WERE TAKEN FROM THESE SURVEYS.
3. LOCATIONS OF MM-1R, MM-13, MM-14, AND MM-15 ARE APPROXIMATE.
4. LOCATIONS OF AMW-2 AND AMW-3 ARE APPROXIMATE.
5. GWA-1A, GWC-4A, GWC-23A, AMW-2, AND AMW-9 ARE NOT USED FOR POTENTIOMETRIC CONTOURS.
6. POTENTIOMETRIC CONTOUR INTERVAL IS 10 FEET.

Summary of Groundwater Elevation Data
Forsyth County - Hightower Road MSWLF
December 2020 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 WELLS				
PH1-GWA-1	48.66	1176.37	41.13	1135.24
PH1-GWA-1A	108.00	1176.35	41.26	1135.09
PH1-GWA-2	53.60	1183.40	35.82	1147.58
PH1-GWA-3A	205.00	1187.16	35.65	1151.51
PH1-GWA-4	57.00	1191.14	36.92	1154.22
PH1-GWB-1	53.80	1179.10	41.17	1137.93
PH1-GWB-2	42.22	1155.04	26.79	1128.25
PH1-GWC-1	23.79	1074.66	7.46	1067.20
PH1-GWC-2	127.61	1103.93	22.14	1081.79
PH1-GWC-3	23.42	1096.96	11.21	1085.75
PH1-GWC-3A	55.42	1096.28	10.11	1086.17
PH1-GWC-4	33.71	1124.26	31.69	1092.57
GWC-1	38.80	1102.25	28.24	1074.01
AMW-8	50.40	1186.23	39.13	1147.10
AMW-9	41.69	1162.64	36.92	1125.72
AMW-10	56.81	1180.73	44.72	1136.01
PHASE II - IV WELLS				
GWA-1	62.85	1187.70	54.30	1133.40
GWA-1A	141.00	1187.49	54.82	1132.67
GWA-2	52.18	1137.30	39.23	1098.07
GWA-3	48.86	1154.53	40.27	1114.26
GWC-2	55.61	1103.64	45.98	1057.66
GWC-3	39.71	1092.39	34.16	1058.23
GWC-3A	68.95	1094.67	32.35	1062.32
GWC-4	49.81	1132.82	42.56	1090.26
GWC-4A	89.23	1132.39	38.98	1093.41
GWC-5	49.91	1084.55	45.53	1039.02
GWC-6	34.52	1064.01	25.13	1038.88
GWC-7	54.21	1093.44	42.01	1051.43
GWC-8	27.53	1095.63	20.70	1074.93
GWC-8A	46.71	1095.44	20.13	1075.31
GWC-8R	94.67	1098.40	23.13	1075.27
GWC-9	60.50	1093.58	48.46	1045.12
GWC-10	37.51	1068.56	23.77	1044.79

Notes: Depths to water measured on December 14, 2020.

Acronyms: ft BTOC = feet below top of casing
ft MSL = feet Mean Sea Level

Summary of Groundwater Elevation Data
Forsyth County - Hightower Rd MSWLF
December 2020 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 II - IV WELLS				
GWC-10A	54.30	1066.45	24.33	1042.12
GWC-11	46.80	1054.08	34.26	1019.82
GWC-12	40.06	1038.06	29.61	1008.45
GWC-12A	49.44	1038.09	30.66	1007.43
GWC-13	44.95	1090.82	32.75	1058.07
GWC-14	28.37	1089.49	22.33	1067.16
GWC-14A	64.75	1089.32	22.25	1067.07
GWC-14R	93.61	1078.60	13.62	1064.98
GWC-15	62.84	1125.68	57.74	1067.94
GWC-16A	51.05	1136.49	49.80	1086.69
GWC-17	21.59	1107.78	13.57	1094.21
GWC-18	52.70	1094.87	43.41	1051.46
GWC-19R	39.87	1105.79	26.23	1079.56
GWC-22	35.05	1079.01	20.79	1058.22
GWC-23	32.22	1079.06	16.67	1062.39
GWC-23A	61.67	1079.10	14.19	1064.91
GWC-24	44.09	1102.32	34.91	1067.41
AMW-1	180.70	1130.04	61.11	1068.93
AMW-2	150.00	1101.96	42.70	1059.26
AMW-3	28.50	1041.09	9.31	1031.78
AMW-4	18.80	1040.09	3.96	1036.13
AMW-5	23.06	1049.32	7.38	1041.94
AMW-11R	58.10	1053.63	8.15	1045.48
AMW-12	19.56	1056.85	7.70	1049.15
AMW-12R	46.43	1056.34	9.96	1046.38
AMW-13	36.18	1093.09	32.00	1061.09
AMW-14	21.70	1052.73	9.12	1043.61

Notes: Depths to water measured December 14, 2020.

Acronyms: ft BTOC = feet below top of casing
ft MSL = feet Mean Sea Level

LEGEND

- APPROXIMATE PHASE BOUNDARY
- 1140 — TOPOGRAPHIC CONTOUR
- PROPERTY LINE
- ROAD
- GWA-1 1130.03 — GROUNDWATER MONITORING WELL ELEVATION IN FEET MEAN SEA LEVEL
- SWA-4 — SURFACE WATER SAMPLE LOCATIONS
- MM-1R — METHANE MONITORING POINT
- PH1-MV04 — EXTRACTION POINT WITH ACTIVE FLARE
- 1080 — GROUNDWATER POTENTIOMETRIC CONTOUR (ELEVATION IN FEET MEAN SEA LEVEL)
- GROUNDWATER FLOW DIRECTION
- METHANE VENT TRENCH

Summary of Methane Well Details
Hightower Road Landfill
Forsyth County, GA

Well ID	Total Depth (ft BGS)	Screen Interval (ft BGS)
MM-1R	30.0	10-30
MM-2	20.0	10-20
MM-3	20.0	10-20
MM-4	20.0	10-20
MM-5	20.0	10-20
MM-6	20.0	10-20
MM-7	20.0	10-20
MM-8	10.0	5-10
MM-9	20.0	10-20
MM-10	35.0	25-35
MM-11	20.0	10-20
MM-13	31.5	20.4-30.4
MM-14	35.8	24.7-34.7
MM-15	41.5	30.4-40.4

Note: ft BGS = feet below ground surface

300 0 150 300 600

SCALE: 1" = 300' (IN FEET)

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PROJECT:

FORSYTH COUNTY HIGHTOWER ROAD LANDFILL

FORSYTH COUNTY, GA

FORSYTH COUNTY

FORSYTH COUNTY GOVERNMENT
110 E. MAIN STREET, SUITE 210
CUMMING, GA 30040
770-781-2101

Drawn by: RW | Checked by: CA

PROJECT NUMBER:

G020-113

February 2020

POTENTIOMETRIC SURFACE MAP DECEMBER 2020

FIGURE 1

P:\Governmental\G020-Forsyth County\113-2020 Environmental Monitoring Services\4-2nd 2020 GWM Event\DWG\Forsyth Co 2nd 2020 Pot Map.dwg 2021-02-25 CHARLES ADAMS