Commonwealth of Virginia

Blalock, Susan <susan.blalock@deq.virginia.gov>

FW: Semi-Monthly Daily LFG Well Temperature Update

1 message

Crystal Bazyk <crystal.bazyk@deq.virginia.gov> Wed, Nov 16, 2022 at 3:41 PM
To: "Blalock, Susan" <susan.blalock@deq.virginia.gov>

From: King, Brandon <BKing@scsengineers.com>
Sent: Wednesday, November 16, 2022 2:36 PM
To: crystal.bazyk@deq.virginia.gov; hall.kristen@epa.gov; jeff.hurst@deq.virginia.gov; willard.erinm@epa.gov; stacy.bowers@deq.virginia.gov; David Cochran <dcochran@bristolva.org>; Randall Eads <CityManager@bristolva.org>; Joey Lamie <Joey.Lamie@bristolva.org>; Jake Chandler <jacob.chandler@bristolva.org>; jon.hayes@bristolva.org; 'mmartin@bristolva.org' (mmartin@bristolva.org) <mmartin@bristolva.org>
Cc: Nachman, Lucas <LNachman@scsengineers.com>; Dick, Bob <BDick@scsengineers.com>; Warren, Charles <CWarren@scsengineers.com>; Lock, Tom <TLock@scsengineers.com>; Mahon, Ryan <RMahon@scsengineers.com>
Subject: Semi-Monthly Daily LFG Well Temperature Update

Ms. Hall and Ms. Bazyk,

In accordance with EPA's letter, "Approval of Higher Operating Temperature Values of Landfill Gas Wells and Submission of Gas Treatment Alternatives at the Bristol Virginia Integrated Solid Waste Facility" from August 2021, I am providing the November 15th, 2022 status update on the existing wells, expansion of the gas collection system, and continuing operating and monitoring results, covering the period from November 1-15, 2022.

Thank you,

D. Brandon King

SCS Engineers

Project Manager

15521 Midlothian Turnpike, Suite 305

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Bimonthly Daily LFG Well Temperature Update_11-15-22_FINAL.pdf
8773K

November 15, 2022
File No. 02218208.04

MEMORANDUM

TO: Kristin Hall, EPA Region III
Crystal Bayzk, VDEQ-SWRO

FROM: D. Brandon King, SCS Engineers
Robert E. Dick, SCS Engineers

SUBJECT: Semi-monthly Status Update – November 1st through November 15th, 2022
Bristol Integrated Waste Management Facility, Bristol, Virginia

In accordance with the Environmental Protection Agency (EPA) Region III letter, *Approval of Higher Operating Temperature Values for Landfill Gas Wells and Submission of Gas Treatment Alternatives at the Bristol Virginia Integrated Solid Waste Management Facility*, dated 8/23/21, SCS is submitting this semi-monthly status update to satisfy the condition of compliance provision #2. This compliance provision report includes daily temperature readings of the existing and new wells installed. In addition, this report includes a summary of work accomplished during this reporting period of 10/1/22 through 10/15/22, pursuant of compliance provision #2.

DAILY TEMPERATURE READINGS

The City recorded daily temperature readings throughout the first half of November and displayed on the attached table. Existing well GW-37 began this reporting period with temperatures greater than 145F and GW-46 had a couple intermittent readings above 145F during this period. However, well GW-37 recorded a temperature of 145F by the end of the reporting period according to the City's data, while GW-46 read below 145F. New wells GW-51, GW-53, GW-57, and GW-67 began this reporting period with temperatures greater than 145F. Well GW-53 did not exceed 145F the previous reporting period, but remained greater than 145F throughout this period. New wells GW-57 and GW-67 recorded temperatures greater than 145F during the first half of November and remained greater than 145F at the end of this reporting period according to the City's data. New well GW-51 recorded temperatures below 145F until the last day of this reporting period according to the City's data. GW-54 and GW-56 had a few daily readings greater than 145F during this reporting period. The City's daily LFG wellhead temperature data is attached. SCS conducted the November monthly wellfield monitoring on 11/3/22.

LFG ANALYTICAL DATA REVIEW

The City and SCS are still awaiting the EPA's evaluation of the Higher Operating Value for Temperature Request letter submitted to EPA on 3/8/22. According to SCS November 2022 LFG monthly wellfield data, exceedance temperatures continue in HOV requested wells GW-31R and GW-37. In addition, LFG wells GW-51, GW-52, GW-53, and GW-67 recorded a temperature above 145F on 11/3/22.

Wells GW-31R and GW-37 recorded temperatures of 165F and 148F respectively by SCS during initial monthly wellfield activities on 11/3/22. Wells GW-51, GW-52, GW-53, and GW-67 recorded temperatures of 164F, 168F, 151F and 154F respectively on 11/3/22 by SCS. However, SCS

recorded readings below 145F in GW-51 on 11/10/22 and below 145F in GW-53 on 11/4/22. SCS recorded a temperature of 154F in GW-46 on 11/3/22, but it is under a temperature HOV. SCS collected CO samples via 1.5L Summa Canister at well GW-57 on 10/26/22, and at wells GW-51, GW-52, GW-46, and GW-67 on 11/4/22. GW-46 recorded CO below the detection limit. Wells GW-51 and GW-67 recorded 539 ppm and 780 ppm respectively. Wells GW-57 and GW-52 recorded CO below 500 ppm. SCS personnel did not observe any signs of SSO events while performing the routine wellfield monitoring on November 3. SCS looked for smoke, settlements, discolored or deformed piping, but observed no evidence at any wellhead. The CO laboratory analytical results are attached.

NON-ROUTINE O&M

City personnel have continued hauling cover soil into Permit #498 Landfill and spreading over exposed areas of waste during the first half of November, weather permitting. The City is conducting soil cover testing in Permit #498 to evaluate progress. The Permit No. 498 Landfill had previously been subject to intermittent reclamation mining activities prior to the closing of the Permit No. 588 Landfill. See photo for reference.

SCS and the City's O&M contractor are currently investigating the 6-inch LFG header to the Permit No. 498 Landfill being blocked with liquid or damaged between the access road and well GW-19. The City's contractor excavated an area of the LFG header near GW-19 and drilled a test port in the 6-inch LFG header, which demonstrated condensate seeping through the test port. The contractor will divert around this compromised area to provide vacuum to GW-19, GW-20, and GW-21. The City's contractor completed a road crossing between GW-19 and GW-20 where haul trucks have been dumping soil in Permit #498. This investigation and repair effort is ongoing.

The City's O&M contractor has cleaned, tested and replaced nine pumps in LFG wells in the south end of Permit #588 during this reporting period. SCS has strategically selected LFG wells near current temperature probe drilling operations to switch out pumps to dewater the drilling area. The O&M contractor has an additional three pumps on hand to switch out in wells located in the central portion of Permit #588 this week.

The City's O&M contractor excavated the 8-inch LFG header at the road crossing just south of the leachate collection tank (LCT-1) on 11/14/22. The contractor elevated the header to drain a blockage to wells GW-36 and GW-65, thus restoring vacuum to these wells. This project is still ongoing.

Connelly is continuing with the drilling and installation of the dedicated temperature probes. Thus far, Connelly has bored and installed casings in TP-1 through TP-4. There was an instance where Connelly moved equipment from TP-2 to TP-3 and a skidsteer loader damaged a 2" airline late afternoon on 11/8/22. This section of airline was isolated from the remainder of the dewatering system. The City's O&M contractor repaired the airline and restored operations on this section of the dewatering system. See photo below.

SCS-FS O&M is on-site conducting work on the south cleanout improvements. SCS fused the 12" and 8" LFG header pipe during the week of 11/7/22. SCS-FS O&M started excavation work, but the majority of this south leachate cleanout improvement project will occur during the second half of November. Inclement weather has impeded progress early in the week of 11/14/22.

View of Permit No. 498 cover conditions on 11-11-22. Camera facing southeast.

View of airline repair adjacent to temperature probe TP-3.

Settlement plate installed near leachate collection tank (LCT-1).

LFG header (8-inch) road crossing to wells GW-36 and GW-65. Header regraded and vacuum reestablished to wells.

EVALUATION OF LFG SYSTEM

The City is equipped with several functional dedicated pneumatic dewatering pumps available on standby to be switched out in the event a well has a non-functioning pump. The City has set up a dedicated pump cleaning and testing station allowing SCS-FS O&M access to the City's wash bay. This includes an air compressor from a service truck and a water barrel to test the pneumatic pumps to satisfy this need from O&M. SCS-FS O&M will continue to use this testing and cleaning station to clean select pumps based on cycle counter data. SCS recommends the City procure four additional

Pump One pumps at this time. Some of the pumps pulled were deemed non-repairable upon inspection by the City's O&M contractor and SCS recommends having several pumps on standby.

SCS is continuing weekly surface emissions monitoring per the Plan of Action Report dated 7/6/22. The City has provided daily cover throughout the Permit No. 588 Landfill based on soil boring testing results, including soil cover over the LFG, airline, and forcemain piping. This resulted in a couple damaged areas of the dewatering system piping, which were repaired on 10/12/22. Subsequent to the installation of the foam seals to nine select LFG wells for pipe penetrations monitored greater than 500 ppm during weekly SEM events, SCS monitoring data has shown continuing locations greater than 500 ppm. The City has procured well bore skirts per SCS recommendation for installation around the wells as an alternative to reduce LFG emissions around pipe penetrations. The O&M contractor will begin installation of these skirts during the next reporting period.

SCS conducted the initial monthly LFG wellfield monitoring on 11/3/22 and recorded the pump stroke counter data. SCS updated the pump stroke counter analysis table. SCS provided O&M a list of wells to perform maintenance, cleaning, and testing activities at the City's dedicated pump servicing station. The City's O&M contractor replaced the pump in the poly leachate collection tank (LCT-1), as well as replaced the pump in condensate sump CPS-2 with refurbished pumps the City had on standby. The Contractor installed a second pump in LCT-1 to enhance the City's dewatering efforts.

SCS Engineers understands the south end leachate cleanouts are connected to the existing LFG System from a pilot-scale collection system SCS installed on behalf of Ingenco in 2020. SCS-FS O&M is currently working on the south cleanout LFG collection system upgrade, which will enhance LFG collection from the Permit #588 Landfill. Furthermore, SCS is assessing additional LFG components for future installation in the Permit #588 Landfill at this time.

Please contact SCS or City personnel if you have any questions or require additional information.

cc: Randall Eads, City of Bristol
Michael Maine, City of Bristol
Jeff Hurst, VDEQ-SWRO
Tom Lock, SCS Field Services
David Cochran, City of Bristol
Erin Willard, EPA Region III
Stacy Bowers, VDEQ-SWRO
Robert E. Dick, P.E., SCS Engineers

Note	Well Depth	Date Drill	Phase	Month	November	November	November	November	November	November	November	November	November	November	November	November	November	November	November
				Day	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
				Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
				Well Number															
1	102	10/16/2016	Old Well	**35**	70	72	69	74	75	75	75	74	73	75	76	72	72	65	45
2	70	9/6/2017	Old Well	**39**	110	111	115	118	113	115	110	110	111	112	109	114	112	114	88
3	100	9/7/2017	Old Well	**40**	120	120	118	120	115	112	113	118	116	118	118	120	120	120	100
4	110	10/4/2016	Old Well	**46**	142	140	140	145	145	144	140	140	142	140	144	142	141	140	125
5	120	10/4/2016	Old Well	**47**	120	122	122	122	120	118	117	116	116	117	125	120	126	122	75
6	120	9/17/2013	Old Well	**29**	102	100	105	108	110	112	98	99	100	98	95	96	98	98	98
7	100	8/23/2017	Old Well	**30R**	130	132	130	133	130	132	130	130	132	132	132	130	133	133	134
8	120	8/30/2017	Old Well	**31R**	141	144	140	140	142	140	140	140	140	141	142	142	141	140	140
9	70	7/29/2016	Old Well	**32**	70	72	74	76	77	78	76	78	80	80	76	78	78	76	75
10	100	7/28/2016	Old Well	**33**	118	119	120	120	118	116	118	118	116	118	118	116	116	115	115
11	100	7/30/2016	Old Well	**34**	110	111	110	110	110	112	113	112	112	115	115	113	112	112	113
12	100	8/1/2016	Old Well	**36**	70	72	74	75	85	87	88	88	79	78	78	79	80	80	82
13	100	8/24/2017	Old Well	**37**	150	149	150	145	147	145	140	145	145	145	140	142	142	142	145
14	50	8/25/2017	Old Well	**38**	100	102	100	105	104	105	106	106	108	108	105	106	104	105	109
15	75	9/8/2017	Old Well	**41**	141	140	144	142	140	142	142	140	143	140	145	145	141	141	142
16	57	9/8/2017	Old Well	**42**	116	116	118	115	117	115	116	116	117	117	115	115	115	114	115
17	110	10/7/2016	Old Well	**48**	59	60	75	75	71	70	70	71	72	72	70	68	69	68	68
1	120	10/1/2021	New Well	**32R**	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall	Too Tall
2	110	10/1/2021	New Well	**49**	130	131	130	132	134	135	135	135	135	138	138	136	136	133	130
3	96	10/1/2021	New Well	**50**	128	129	128	129	127	125	129	128	128	127	128	129	125	126	125
4	114	10/1/2021	New Well	**51**	156	155	150	150	Well head off	Flex hose blown off land blowing water	150	150	149	149	145	146	148	146	142
5	109	10/1/2021	New Well	**52**	80	82	90	95	96	100	100	99	102	102	101	100	100	98	99
6	91	10/1/2021	New Well	**53**	149	150	154	150	153	155	152	154	154	155	150	150	153	150	149
7	91	10/1/2021	New Well	**54**	140	140	142	145	145	141	140	140	140	142	142	141	140	145	142
8	104	10/1/2021	New Well	**55**	112	114	114	115	117	112	113	115	115	114	112	113	115	115	114
9	109	10/1/2021	New Well	**56**	142	144	145	140	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off	Well head pulled off
10	103	10/1/2021	New Well	**57**	150	149	150	150	148	150	150	150	150	151	152	152	154	155	150
11	92	10/1/2021	New Well	**58**	120	122	120	122	120	122	126	125	125	126	122	120	119	126	128
12	72	10/1/2021	New Well	**59**	125	125	126	125	121	121	120	125	125	124	126	128	121	122	120
13	120	10/1/2021	New Well	**60**	130	132	130	132	129	126	125	125	126	122	122	130	132	130	133
14	105	10/1/2021	New Well	**61**	98	100	102	100	105	109	110	116	115	114	115	115	112	122	120
15	120	10/1/2021	New Well	**62**	122	124	125	122	118	120	122	123	120	120	125	125	122	118	119
16	117	10/1/2021	New Well	**63**	120	122	122	120	120	117	125	125	125	124	126	122	125	120	123
17	120	10/1/2021	New Well	**64**	140	139	140	142	141	138	135	135	137	137	138	135	135	130	133
18	100	10/1/2021	New Well	**65**	136	135	132	133	132	133	140	140	142	139	138	138	133	138	134
19	102	10/1/2021	New Well	**66**	130	130	133	130	134	135	133	129	130	133	130	130	129	128	129
20	100	10/1/2021	New Well	**67**	150	150	150	151	150	148	150	151	150	154	154	155	155	154	150
21	75	10/1/2021	New Well	**68**	129	128	126	125	129	125	120	124	122	126	122	124	126	128	128

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Certificate of Analysis

Final Report

Laboratory Order ID 22J1332

Client Name:	SCS Field Services - Harrisburg, PA	Date Received:	October 27, 2022 10:12
	4330 Lewis Road, Suite 1	Date Issued:	November 3, 2022 16:29
	Harrisburg, PA 17111	Project Number:	Bristol
Submitted To:	Tom Lock	Purchase Order:	
Client Site I.D.:	Bristol		

Enclosed are the results of analyses for samples received by the laboratory on 10/27/2022 10:12. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Technical Director

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

TNI Accredited
VELAP ID 460021

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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
57	22J1332-01	Air	10/26/2022 09:17	10/27/2022 10:12

ENTHALPY ANALYTICAL

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ANALYTICAL RESULTS

Project Location:

Field Sample #: 57

Sample ID: 22J1332-01

Sample Matrix: Air

Sampled: 10/26/2022 09:17

Sample Type: LG

Sample Description/Location:

Sub Description/Location:

Canister ID: 063-00208::00286

Canister Size: 1.4

Initial Vacuum(in Hg): 30

Final Vacuum(in Hg): 16

Receipt Vacuum(in Hg): 16

Flow Controller Type: Passive

Flow Controller ID:

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis
ALT-145

Analyte	ppmv Result	MDL	LOQ	Flag/Qual	Dilution	PF	Date/Time Analyzed	Analyst
Carbon Monoxide, as received	133	90.0	90.0		9	1	10/28/22 10:01	MER

ENTHALPY ANALYTICAL

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Submitted To:	Tom Lock	Project Number:	Bristol
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Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis			**Preparation Method:**	**No Prep VOC GC Air**	
22J1332-01	1.00 mL / 1.00 mL	ALT-145	BFJ0870	SFJ1078	AG00026

ENTHALPY ANALYTICAL

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Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFJ0870 - No Prep VOC GC Air										
Blank (BFJ0870-BLK1)					Prepared & Analyzed: 10/24/2022					
Carbon Monoxide	<	10.0	ppmv							
LCS (BFJ0870-BS1)					Prepared & Analyzed: 10/24/2022					
Methane	4490	500	ppmv	5000		89.8	0-200			
Carbon dioxide	4110	500	ppmv	5000		82.3	0-200			
Oxygen (O2)	5520	500	ppmv	5000		110	0-200			
Nitrogen (N2)	6690	2000	ppmv	5000		134	0-200			
Hydrogen (H2)	5790	200	ppmv	5100		113	0-200			
Carbon Monoxide	4820	10	ppmv	5000		96.3	0-200			
Duplicate (BFJ0870-DUP1)			**Source: 22J1080-01**		Prepared & Analyzed: 10/24/2022					
Methane	412000	4500	ppmv		412000			0.0289	25	
Carbon dioxide	408000	4500	ppmv		407000			0.277	25	
Oxygen (O2)	20700	4500	ppmv		20700			0.0361	25	C
Nitrogen (N2)	81500	18000	ppmv		81100			0.426	25	
Hydrogen (H2)	22200	1800	ppmv		22300			0.0724	25	
Carbon Monoxide	105	90.0	ppmv		102			3.05	25	
Duplicate (BFJ0870-DUP2)			**Source: 22J1080-02**		Prepared & Analyzed: 10/24/2022					
Methane	149000	4500	ppmv		149000			0.0974	25	
Carbon dioxide	229000	4500	ppmv		229000			0.293	25	
Oxygen (O2)	73200	4500	ppmv		73100			0.120	25	C
Hydrogen (H2)	10200	1800	ppmv		10100			0.769	25	
Nitrogen (N2)	431000	18000	ppmv		430000			0.125	25	
Carbon Monoxide	97.0	90.0	ppmv		94.9			2.25	25	
Duplicate (BFJ0870-DUP3)			**Source: 22J1078-01**		Prepared & Analyzed: 10/24/2022					
Methane	324000	4500	ppmv		325000			0.413	25	
Carbon dioxide	268000	4500	ppmv		269000			0.419	25	
Oxygen (O2)	10900	4500	ppmv		11100			1.79	25	C
Nitrogen (N2)	322000	18000	ppmv		323000			0.549	25	
Hydrogen (H2)	<	1800	ppmv		<1800			NA	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	

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Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFJ0870 - No Prep VOC GC Air										
Duplicate (BFJ0870-DUP4)			**Source: 22J1089-01**		Prepared & Analyzed: 10/24/2022					
Methane	276000	4500	ppmv		275000			0.425	25	
Carbon dioxide	492000	4500	ppmv		491000			0.156	25	
Oxygen (O2)	<	4500	ppmv		<4500			NA	25	C
Hydrogen (H2)	124000	1800	ppmv		124000			0.0336	25	
Nitrogen (N2)	69000	18000	ppmv		68900			0.0724	25	
Carbon Monoxide	647	90.0	ppmv		636			1.71	25	
Duplicate (BFJ0870-DUP5)			**Source: 22J1089-02**		Prepared & Analyzed: 10/24/2022					
Methane	312000	4500	ppmv		309000			0.742	25	
Carbon dioxide	494000	4500	ppmv		489000			0.982	25	
Oxygen (O2)	19800	4500	ppmv		19700			0.433	25	C
Hydrogen (H2)	46300	1800	ppmv		46000			0.745	25	
Nitrogen (N2)	72200	18000	ppmv		72000			0.355	25	
Carbon Monoxide	371	90.0	ppmv		367			1.05	25	
Duplicate (BFJ0870-DUP6)			**Source: 22J1089-03**		Prepared & Analyzed: 10/24/2022					
Methane	64600	4500	ppmv		64800			0.259	25	
Carbon dioxide	631000	4500	ppmv		631000			0.0692	25	
Oxygen (O2)	13900	4500	ppmv		14100			1.73	25	C
Hydrogen (H2)	182000	1800	ppmv		182000			0.212	25	
Nitrogen (N2)	52400	18000	ppmv		53300			1.80	25	
Carbon Monoxide	1430	90.0	ppmv		1430			0.196	25	
Duplicate (BFJ0870-DUP7)			**Source: 22J1307-01**		Prepared: 10/24/2022 Analyzed: 10/27/2022					
Methane	265000	9000	ppmv		265000			0.114	25	
Carbon dioxide	463000	9000	ppmv		461000			0.335	25	
Oxygen (O2)	<	9000	ppmv		<9000			NA	25	
Hydrogen (H2)	107000	3600	ppmv		107000			0.0419	25	
Nitrogen (N2)	49500	36000	ppmv		50000			1.06	25	
Carbon Monoxide	546	180	ppmv		567			3.72	25	

ENTHALPY ANALYTICAL

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Certificate of Analysis

Final Report

Laboratory Order ID 22J1332

Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	October 27, 2022 10:12 November 3, 2022 16:29
Submitted To:	Tom Lock	Project Number:	Bristol
Client Site I.D.:	Bristol	Purchase Order:	

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFJ0870 - No Prep VOC GC Air										
Duplicate (BFJ0870-DUP8)			**Source: 22J1307-02**		Prepared: 10/24/2022 Analyzed: 10/27/2022					
Methane	207000	9000	ppmv		204000			1.66	25	
Carbon dioxide	549000	9000	ppmv		542000			1.27	25	
Oxygen (O2)	<	9000	ppmv		<9000			NA	25	
Nitrogen (N2)	61200	36000	ppmv		60100			1.83	25	
Hydrogen (H2)	71400	3600	ppmv		70100			1.91	25	
Carbon Monoxide	354	180	ppmv		350			1.14	25	
Duplicate (BFJ0870-DUP9)			**Source: 22J1307-03**		Prepared: 10/24/2022 Analyzed: 10/27/2022					
Methane	179000	9000	ppmv		176000			1.42	25	
Carbon dioxide	332000	9000	ppmv		331000			0.378	25	
Oxygen (O2)	63600	9000	ppmv		63100			0.683	25	C
Nitrogen (N2)	231000	36000	ppmv		229000			0.869	25	
Hydrogen (H2)	61200	3600	ppmv		60600			0.931	25	
Carbon Monoxide	530	180	ppmv		507			4.45	25	
Duplicate (BFJ0870-DUPA)			**Source: 22J1332-01**		Prepared: 10/24/2022 Analyzed: 10/28/2022					
Methane	311000	4500	ppmv		309000			0.793	25	
Carbon dioxide	308000	4500	ppmv		305000			0.760	25	
Oxygen (O2)	58900	4500	ppmv		58900			0.000610	25	C
Hydrogen (H2)	23100	1800	ppmv		23300			1.16	25	
Nitrogen (N2)	216000	18000	ppmv		216000			0.132	25	
Carbon Monoxide	135	90.0	ppmv		133			1.28	25	

Certified Analytes included in this Report

Analyte	Certifications	Analyte	Certifications

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Certificate of Analysis

Final Report

Laboratory Order ID 22J1332

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Submitted To:	Tom Lock	Project Number:	Bristol
Client Site I.D.:	Bristol	Purchase Order:	

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2022
NC	North Carolina DENR	495	07/31/2023
NCDEQ	North Carolina DEQ	495	07/31/2023
NCDOH	North Carolina Department of Health	51714	07/31/2023
NYDOH	New York DOH Drinking Water	12096	04/01/2023
PADEP	NELAP-Pennsylvania Certificate #007	68-03503	10/31/2023
VELAP	NELAP-Virginia Certificate #12157	460021	06/14/2023
WVDEP	West Virginia DEP	350	11/30/2022

Qualifiers and Definitions

C	Continuing calibration verification response for this analyte is outside specifications.
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
PF	Preparation Factor
MDL	Method Detection Limit
LOQ	Limit of Quantitation
ppbv	parts per billion by volume
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
	All EPA method 3C results are reported as normalized values when the sum total of all evaluated constituents is outside ± 10% of the absolute.

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formerly Air, Water & Soil Laboratories

AIR ANALYSIS
CHAIN OF CUSTODY

Equipment due 10/31/2022

COMPANY NAME: SCS Field Services - Harrisburg	INVOICE TO: **Same**	PROJECT NAME/Quote #:
CONTACT: **Mike Byk**	INVOICE CONTACT:	SITE NAME: Bristol
ADDRESS:	INVOICE ADDRESS:	PROJECT NUMBER: Bristol
PHONE #:	INVOICE PHONE #:	P.O. #:
FAX #: EMAIL:		Pretreatment Program:
Is sample for compliance reporting? (YES) NO	**Regulatory State:** VA	Is sample from a chlorinated supply? YES (NO) PWS I.D. #:
SAMPLER NAME (PRINT): Ryan Seymour	SAMPLER SIGNATURE: Ryan Seymour	**Turn Around Time:** Circle: 10 (5 Days) or __ Day

Matrix Codes: AA=Indoor/Ambient Air SG=Soil Gas LV=Landfill/Vent Gas OT=Other_____

063-22J-0014

	CLIENT SAMPLE I.D.	Regulator Info: Flow Controller ID	Regulator Info: Cal Flow (mL/min)	Canister Information: Canister ID	Size (L)	Cleaning Batch ID	LAB Outgoing Canister Vacuum (in Hg)	LAB Receiving Canister Vacuum (in Hg)	Sampling Start Information: Barometric Pres. (in Hg): Start Date	Start Time (24hr clock)	Initial Canister Vacuum (in Hg)	Starting Sample Temp °F	Sampling Stop Information: Barometric Pres. (in Hg): Stop Date	Stop Time (24hr clock)	Final Canister Vacuum (in Hg)	Ending Sample Temp °F	Matrix (See Codes)	ANALYSIS: Alt 145 CO		
1)	57	KF2		286	1.4	220921-02	30		10/26/22	9:14 AM	35 Hg	149°	10/26/22 9:17 AM	9:17 AM	16 Hg	149°	LG	x		
2)				11078	1.4	220921-02	30										LG	x		
3)				11307	1.4	220921-03	30										LG	x		
4)				12464	1.4	220921-02	30										LG	x		

20.3°C 310 noice noseal

RELINQUISHED: Ryan Seymour	2:45 pm	RECEIVED: FedEx Ground	DATE / TIME
RELINQUISHED: FedEx Ground	DATE / TIME 10/26/22	RECEIVED:	DATE / TIME 10/27/22 10:2
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME

QC Data Package
Level I ☐
Level II ☐
Level III ☐
Level IV ☐

LAB USE ONLY

SCS Field Services **22J1332**
Bristol
Recd: 10/27/2022 **Due: 11/03/2022**

v130325002

...3014-Bristol CO -COC

ENTHALPY ANALYTICAL
formerly *Air, Water & Soil Laboratories*

AIR ANALYSIS
CHAIN OF CUSTODY

Equipment due 10/31/2022

COMPANY NAME: SCS Field Services - Harrisburg	INVOICE TO: **Same**	PROJECT NAME/Quote #:
CONTACT: **Mike Byk**	INVOICE CONTACT:	SITE NAME:
ADDRESS:	INVOICE ADDRESS:	PROJECT NUMBER:
PHONE #:	INVOICE PHONE #:	P.O. #:
FAX #: EMAIL:		Pretreatment Program:
Is sample for compliance reporting? YES NO	**Regulatory State:** Is sample from a chlorinated supply? YES NO	PWS I.D. #:
SAMPLER NAME (PRINT):	SAMPLER SIGNATURE:	**Turn Around Time:** Circle: **10** **5 Days** **or** __ **Day**

Matrix Codes: AA=Indoor/Ambient Air SG=Soil Gas LV=Landfill/Vent Gas OT=Other_____

063-22J-0014

	CLIENT SAMPLE I.D.	Regulator Info: Flow Controller ID	Regulator Info: Cal Flow (mL/min)	Canister Information: Canister ID	Size (L)	Cleaning Batch ID	LAB Outgoing Canister Vacuum (in Hg)	LAB Receiving Canister Vacuum (in Hg)	Sampling Start Information: Barometric Pres. (in Hg): Start Date	Start Time (24hr clock)	Initial Canister Vacuum (in Hg)	Starting Sample Temp °F	Sampling Stop Information: Barometric Pres. (in Hg): Stop Date	Stop Time (24hr clock)	Final Canister Vacuum (in Hg)	Ending Sample Temp °F	Matrix (See Codes)	ANALYSIS: Alt 145 CO		
1)				12468	1.4	220921-02											LG	x		
2)				13380	1.4	220921-02											LG	x		
3)																				
4)																				

20.3°C 310 none noted

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
FedEx Gr		[signature]	10/27/22 1012
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME

QC Data Package
Level I ☐
Level II ☐
Level III ☐
Level IV ☐

LAB USE ONLY

SCS Field Services 22J1332
Bristol
Recd: 10/27/2022 Due: 11/03/2022

v130325002

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Certificate of Analysis

Final Report

Laboratory Order ID 22K0376

Client Name:	SCS Field Services - Harrisburg, PA	Date Received:	November 8, 2022 10:20
	4330 Lewis Road, Suite 1	Date Issued:	November 15, 2022 16:30
	Harrisburg, PA 17111	Project Number:	[none]
Submitted To:	Tom Lock	Purchase Order:	07-SO04485
Client Site I.D.:	Bristol		

Enclosed are the results of analyses for samples received by the laboratory on 11/08/2022 10:20. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Technical Director

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

TNI Accredited
VELAP ID 460021

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Certificate of Analysis

Final Report

Laboratory Order ID 22K0376

Client Name:	SCS Field Services - Harrisburg, PA	Date Received:	November 8, 2022 10:20
	4330 Lewis Road, Suite 1	Date Issued:	November 15, 2022 16:30
	Harrisburg, PA 17111	Project Number:	[none]
Submitted To:	Tom Lock	Purchase Order:	07-SO04485

Client Site I.D.: Bristol

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
51	22K0376-01	Air	11/04/2022 09:17	11/08/2022 10:20
67	22K0376-02	Air	11/04/2022 09:22	11/08/2022 10:20
46	22K0376-03	Air	11/04/2022 09:26	11/08/2022 10:20
52	22K0376-04	Air	11/04/2022 09:34	11/08/2022 10:20

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Final Report

Laboratory Order ID 22K0376

Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

ANALYTICAL RESULTS

Project Location:

Field Sample #: 51

Sample ID: 22K0376-01

Sample Matrix: Air

Sampled: 11/4/2022 09:17

Sample Type: LV

Sample Description/Location:

Sub Description/Location:

Canister ID: 063-00184::11073

Canister Size: 1.4L

Initial Vacuum(in Hg): 30

Final Vacuum(in Hg): 7.0

Receipt Vacuum(in Hg): 7.0

Flow Controller Type: Passive

Flow Controller ID:

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis
ALT-145

Analyte	Result (ppmv)	MDL (ppmv)	LOQ (ppmv)	Flag/Qual	Dilution	PF	Date/Time Analyzed	Analyst
Carbon Monoxide, as received	539	90.0	90.0		9	1	11/10/22 11:33	DFH

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Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

ANALYTICAL RESULTS

Project Location:

Field Sample #: 67

Sample ID: 22K0376-02

Sample Matrix: Air

Sampled: 11/4/2022 09:22

Sample Type: LV

Sample Description/Location:

Sub Description/Location:

Canister ID: 063-00318::12384

Canister Size: 1.4L

Initial Vacuum(in Hg): 30

Final Vacuum(in Hg): 5.4

Receipt Vacuum(in Hg): 5.4

Flow Controller Type: Passive

Flow Controller ID:

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis
ALT-145

Analyte	ppmv Result	MDL	LOQ	Flag/Qual	Dilution	PF	Date/Time Analyzed	Analyst
Carbon Monoxide, as received	780	90.0	90.0		9	1	11/10/22 12:28	DFH

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Final Report

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Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

ANALYTICAL RESULTS

Project Location:

Field Sample #: 46

Sample ID: 22K0376-03

Sample Matrix: Air

Sampled: 11/4/2022 09:26

Sample Type: LV

Sample Description/Location:

Sub Description/Location:

Canister ID: 063-00018::12410

Canister Size: 1.4L

Initial Vacuum(in Hg): 30

Final Vacuum(in Hg): 5.4

Receipt Vacuum(in Hg): 5.4

Flow Controller Type: Passive

Flow Controller ID:

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis
ALT-145

Analyte	ppmv Result	MDL	LOQ	Flag/Qual	Dilution	PF	Date/Time Analyzed	Analyst
Carbon Monoxide, as received	ND	90.0	90.0		9	1	11/10/22 13:22	DFH

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Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

ANALYTICAL RESULTS

Project Location:

Field Sample #: 52

Sample ID: 22K0376-04

Sample Matrix: Air

Sampled: 11/4/2022 09:34

Sample Type: LV

Sample Description/Location:

Sub Description/Location:

Canister ID: 063-00022::12413

Canister Size: 1.4L

Initial Vacuum(in Hg): 30

Final Vacuum(in Hg): 5.2

Receipt Vacuum(in Hg): 5.2

Flow Controller Type: Passive

Flow Controller ID:

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis
ALT-145

Analyte	Result (ppmv)	MDL (ppmv)	LOQ (ppmv)	Flag/Qual	Dilution	PF	Date/Time Analyzed	Analyst
Carbon Monoxide, as received	438	90.0	90.0		9	1	11/10/22 14:15	DFH

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Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis			**Preparation Method:**	**No Prep VOC GC Air**	
22K0376-01	1.00 mL / 1.00 mL	ALT-145	BFK0429	SFK0410	AG00026
22K0376-02	1.00 mL / 1.00 mL	ALT-145	BFK0429	SFK0410	AG00026
22K0376-03	1.00 mL / 1.00 mL	ALT-145	BFK0429	SFK0410	AG00026
22K0376-04	1.00 mL / 1.00 mL	ALT-145	BFK0429	SFK0410	AG00026

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Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFK0429 - No Prep VOC GC Air										
Blank (BFK0429-BLK1)					Prepared & Analyzed: 11/10/2022					
Carbon Monoxide	<	10.0	ppmv							
LCS (BFK0429-BS1)					Prepared & Analyzed: 11/10/2022					
Methane	4180	500	ppmv	5000		83.6	0-200			
Carbon dioxide	4200	500	ppmv	5000		83.9	0-200			
Oxygen (O2)	5150	500	ppmv	5000		103	0-200			
Nitrogen (N2)	5530	2000	ppmv	5000		111	0-200			
Hydrogen (H2)	5780	200	ppmv	5100		113	0-200			
Carbon Monoxide	4890	10	ppmv	5000		97.7	0-200			
Duplicate (BFK0429-DUP1)			**Source: 22K0368-01**		Prepared & Analyzed: 11/10/2022					
Methane	146000	4500	ppmv		146000			0.00197	25	
Carbon dioxide	107000	4500	ppmv		106000			0.960	25	
Oxygen (O2)	139000	4500	ppmv		139000			0.108	25	
Hydrogen (H2)	3420	1800	ppmv		3250			5.15	25	
Nitrogen (N2)	501000	18000	ppmv		501000			0.0638	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	
Duplicate (BFK0429-DUP2)			**Source: 22K0457-02**		Prepared & Analyzed: 11/10/2022					
Methane	374000	4500	ppmv		377000			0.948	25	
Carbon dioxide	299000	4500	ppmv		302000			1.07	25	
Oxygen (O2)	44200	4500	ppmv		44700			1.09	25	
Nitrogen (N2)	194000	18000	ppmv		196000			1.07	25	
Hydrogen (H2)	21000	1800	ppmv		21100			0.375	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	
Duplicate (BFK0429-DUP3)			**Source: 22K0318-01**		Prepared & Analyzed: 11/10/2022					
Methane	334000	4500	ppmv		334000			0.0518	25	
Carbon dioxide	336000	4500	ppmv		336000			0.0183	25	
Oxygen (O2)	31500	4500	ppmv		31500			0.0566	25	
Nitrogen (N2)	234000	18000	ppmv		234000			0.152	25	
Hydrogen (H2)	<	1800	ppmv		<1800			NA	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	

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Final Report

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Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFK0429 - No Prep VOC GC Air										
Duplicate (BFK0429-DUP4)			**Source: 22K0376-01**		Prepared & Analyzed: 11/10/2022					
Methane	323000	4500	ppmv		323000			0.0737	25	
Carbon dioxide	421000	4500	ppmv		421000			0.00644	25	
Oxygen (O2)	24800	4500	ppmv		24800			0.157	25	
Hydrogen (H2)	85700	1800	ppmv		85000			0.826	25	
Nitrogen (N2)	88600	18000	ppmv		88600			0.0203	25	
Carbon Monoxide	539	90.0	ppmv		539			0.0668	25	
Duplicate (BFK0429-DUP5)			**Source: 22K0376-02**		Prepared & Analyzed: 11/10/2022					
Methane	200000	4500	ppmv		200000			0.118	25	
Carbon dioxide	585000	4500	ppmv		584000			0.190	25	
Oxygen (O2)	<	4500	ppmv		<4500			NA	25	
Hydrogen (H2)	180000	1800	ppmv		179000			0.678	25	
Nitrogen (N2)	<	18000	ppmv		<18000			NA	25	
Carbon Monoxide	787	90.0	ppmv		780			0.873	25	
Duplicate (BFK0429-DUP6)			**Source: 22K0376-03**		Prepared & Analyzed: 11/10/2022					
Methane	385000	4500	ppmv		385000			0.151	25	
Carbon dioxide	385000	4500	ppmv		385000			0.0942	25	
Oxygen (O2)	9910	4500	ppmv		9970			0.675	25	
Hydrogen (H2)	22700	1800	ppmv		22800			0.232	25	
Nitrogen (N2)	135000	18000	ppmv		136000			0.115	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	
Duplicate (BFK0429-DUP7)			**Source: 22K0376-04**		Prepared & Analyzed: 11/10/2022					
Methane	142000	4500	ppmv		143000			0.214	25	
Carbon dioxide	575000	4500	ppmv		574000			0.226	25	
Oxygen (O2)	10800	4500	ppmv		10800			0.105	25	
Nitrogen (N2)	40300	18000	ppmv		40300			0.0737	25	
Hydrogen (H2)	223000	1800	ppmv		223000			0.0272	25	
Carbon Monoxide	447	90.0	ppmv		438			1.99	25	

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Certificate of Analysis

Final Report

Laboratory Order ID 22K0376

Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

Volatile Organic Compounds by GC/TCD - Unadjusted, as received basis - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFK0429 - No Prep VOC GC Air										
Duplicate (BFK0429-DUP8)			**Source: 22K0452-01**		Prepared & Analyzed: 11/10/2022					
Methane	325000	4500	ppmv		324000			0.381	25	
Carbon dioxide	308000	4500	ppmv		306000			0.774	25	
Oxygen (O2)	32300	4500	ppmv		32200			0.339	25	
Hydrogen (H2)	<	1800	ppmv		<1800			NA	25	
Nitrogen (N2)	277000	18000	ppmv		276000			0.405	25	
Carbon Monoxide	<	90.0	ppmv		<90.0			NA	25	

Certified Analytes included in this Report

Analyte	Certifications	Analyte	Certifications

Code	Description	Laboratory ID	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2022
NC	North Carolina DENR	495	07/31/2023
NCDEQ	North Carolina DEQ	495	07/31/2023
NCDOH	North Carolina Department of Health	51714	07/31/2023
NYDOH	New York DOH Drinking Water	12096	04/01/2023
PADEP	NELAP-Pennsylvania Certificate #008	68-03503	10/31/2023
VELAP	NELAP-Virginia Certificate #12157	460021	06/14/2023
WVDEP	West Virginia DEP	350	11/30/2022

ENTHALPY ANALYTICAL

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 22K0376

Client Name:	SCS Field Services - Harrisburg, PA 4330 Lewis Road, Suite 1 Harrisburg, PA 17111	Date Received: Date Issued:	November 8, 2022 10:20 November 15, 2022 16:30
Submitted To:	Tom Lock	Project Number:	[none]
Client Site I.D.:	Bristol	Purchase Order:	07-SO04485

Qualifiers and Definitions

RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
PF	Preparation Factor
MDL	Method Detection Limit
LOQ	Limit of Quantitation
ppbv	parts per billion by volume

TIC — Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.

All EPA method 3C results are reported as normalized values when the sum total of all evaluated constituents is outside ± 10% of the absolute.

ENTHALPY ANALYTICAL
formerly *Air, Water & Soil Laboratories*

AIR ANALYSIS
CHAIN OF CUSTODY

Equipment due 11/30/22

COMPANY NAME: SCS Field Services - Harrisburg	INVOICE TO: **Same**	PROJECT NAME/Quote #: **Bristol**
CONTACT: **Mike Byk**	INVOICE CONTACT:	SITE NAME:
ADDRESS:	INVOICE ADDRESS:	PROJECT NUMBER:
PHONE #:	INVOICE PHONE #:	P.O. #:
FAX #: EMAIL:		Pretreatment Program:
Is sample for compliance reporting? (YES) NO	**Regulatory State:** VA	Is sample from a chlorinated supply? YES (NO) PWS I.D. #:
SAMPLER NAME (PRINT): Ryan Seymour	SAMPLER SIGNATURE: Ryan Seymour	**Turn Around Time:** Circle: 10 (5 Days) or __ Day

Matrix Codes: AA=Indoor/Ambient Air SG=Soil Gas LV=Landfill/Vent Gas OT=Other OT

063-22J-0032

	CLIENT SAMPLE I.D.	Regulator Info: Flow Controller ID	Regulator Info: Cal Flow (mL/min)	Canister Information: Canister ID	Size (L)	Cleaning Batch ID	LAB Outgoing Canister Vacuum (in Hg)	LAB Receiving Canister Vacuum (in Hg)	Sampling Start Information: Start Date	Start Time (24hr clock)	Barometric Pres. (in Hg): Initial Canister Vacuum (in Hg)	Starting Sample Temp °F	Sampling Stop Information: Stop Date	Stop Time (24hr clock)	Barometric Pres. (in Hg): Final Canister Vacuum (in Hg)	Ending Sample Temp °F	Matrix (See Codes)	ANALYSIS: Alt 145 CO		
1)	51			11073	1.4	221018-04	30	30 (7.0)	11/4/22	9:10AM	30	160	11/4/22	9:17 AM	4	160	LG	x		
2)	67			12384	1.4	221013-02	30	30 (5.4)	11/4/22	9:20AM	30	145	11/4/22	9:22 AM	5	145	LG	x		
3)	46			12410	1.4	221014-01	30	30 (5.4)	11/4/22	9:24 AM	30	149	11/4/22	9:26 AM	5	149	LG	x		
4)	52			12413	1.4	221018-04	30	30 (5.2)	11/4/22	9:30AM	30	164	11/4/22	9:34AM	6	164	LG	x		

310, 20.3°C, no ice, no seal

RELINQUISHED: Ryan Seymour		RECEIVED: FedEx E DATE / TIME	QC Data Package
RELINQUISHED: FedEx E DATE / TIME		RECEIVED: mm 11/8/22 1020 DATE / TIME	Level I ☐
RELINQUISHED: DATE / TIME		RECEIVED: DATE / TIME	Level II ☐
			Level III ☐
			Level IV ☐

LAB USE ONLY

SCS Field Services 22K0376
Bristol
Recd: 11/08/2022 Due: 11/15/2022

v130325002

063-22J-0032-Bristol CO-COC