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Jacobs

Technical Memorandum

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Subject	Fourth Quarter 2021 Soil Vapor Monitoring, SFPP Norwalk Pump Station, Norwalk, California	Project Name	SFPP Norwalk Pump Station, Norwalk, California
Attention	Mr. Paul Cho/California Regional Water Quality Control Board		
Prepared by	Todd Kremmin/Jacobs Trevre Andrews/Jacobs		
Reviewed by	Eric Davis/Jacobs		
Date	February 15, 2022		
Copies to	Court Reece/Kinder Morgan		

1. Introduction

Jacobs Engineering Group Inc. (Jacobs) is pleased to submit this technical memorandum (tech memo) on behalf of Santa Fe Pacific Pipelines, L.P. (SFPP), an operating partner of Kinder Morgan, Inc. (Kinder Morgan). This tech memo presents soil vapor monitoring analytical results collected in November 2021 (i.e., the fourth quarter 2021) at the SFPP, L.P. (SFPP) Norwalk Pump Station, located within Defense Fuel Support Point (DFSP) Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1).

This tech memo is being submitted pursuant to a request from the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) in a letter dated November 9, 2021 (Regional Board, 2021), in which the Regional Board requested that Kinder Morgan submit quarterly soil vapor monitoring reports 45 days after the end of each standard calendar quarter.

2. Background

Kinder Morgan utilizes a network of 31 dual- or triple-nested soil vapor monitoring probes (SVPs) located within and around their three areas of ongoing treatment and monitoring at the site: the south-central area in the 36-acre parcel, the offsite/south-central area in the residential area south of the 36-acre parcel, and the southeastern area in the 15-acre parcel (Figure 2). These SVPs comprise 65 unique sample intervals from approximately 5, 10, and 15 feet below ground surface (ft bgs) that are available for monitoring. This network of SVPs has expanded in recent years to support ongoing remedial action and performance monitoring.

Additional site background information and historical data from long-term soil vapor monitoring can be found in the recently submitted *Interim Remedial Action Plan (IRAP) – Implementing an NSZD Remedy* (Jacobs, 2022a), the *Fourth Quarter 2021 Remediation Progress Report* (Jacobs, 2022b), and in previously

submitted quarterly remediation progress reports available for download on "GeoTracker," the Regional Board's internet-accessible database system.

3. Sampling

During the fourth quarter of 2021, 55 native samples were collected from 26 SVPs (Table 1, Figure 2) using 1.4-liter Summa canisters. Four ambient air samples were also collected. Sampling was performed in accordance with the Department of Toxic Substances Control's (DTSC) *Advisory for Active Soil Gas Investigations* (DTSC, 2015). The samples were analyzed by the American Analytics laboratory for the following analytes:

- Volatile organic compounds (VOCs) using Environmental Protection Agency (EPA) Method TO-15
- Total petroleum hydrocarbon – gasoline (TPH-g) using EPA Method TO-3
- Fixed gases (carbon dioxide, methane, and oxygen) using EPA Method 3CM

Included in the TO-15 list of analytes were benzene, toluene, ethylbenzene, and xylene (BTEX), methyl tert-butyl ether (MTBE), naphthalene, tertiary butyl alcohol, 1,2-dichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, sec-butylbenzene, isopropylbenzene, n-propylbenzene, and 2-propanol (the leak test compound). These constituents were identified as contaminants of potential concern (COPCs) based on the results of the *Vapor Intrusion Sampling and Human Health Risk Assessment* (Geomatrix, 2006).

4. Results

Table 2 presents the analytical results for samples collected during the November 2021 sampling event. Laboratory analytical reports are included in the attachment to this tech memo. A summary of results is provided as follows:

- During the fourth quarter 2021 sampling event, no COPCs were detected in any SVPs.
- The offsite probes SVM-25 (5-foot depth) and SVM-27 (5- and 10-foot depths) were the only probes with COPC detections. Naphthalene was detected in SVM-25 (5-foot depth) at 0.0082 micrograms per liter (µg/L) and in SVM-27 (10-foot depth) at 0.0039 µg/L. 1,2-Dichloroethane was detected at a concentration of 0.0045 µg/L in SVM-27 (5-foot depth). All COPCs were below EPA's residential regional screening level (RSL) for air (EPA, 2021). In addition, COPCs were below screening levels based on the attenuation factor in Human and Ecological Risk Office (HERO) Note 2 for calculating DTSC-modified screening levels (DTSC, 2020).
- Other (i.e., non-COPC) compounds that were also detected during the fourth quarter 2021 sampling event included bromodichloromethane, chloroform, ethanol, tetrachloroethylene (PCE), trichloroethylene (TCE), and TPH-g. Most of those detections were below DTSC-modified screening levels (DTSC, 2020), and EPA RSLs (EPA, 2021), or there are no established screening levels. The SVPs where concentrations exceeded the current RSLs were: SVM-2 (PCE at 5 ft bgs), SVM-3 (bromodichloromethane and chloroform at 5 ft and 15 ft bgs); SVM-7 (chloroform at 13 ft bgs); SVM-9 (PCE at 5 ft bgs); SVM-11 (PCE at 22 ft bgs); SVM-12 (PCE at 22 ft bgs); SVM-14R (chloroform at 16 ft bgs); SVM-15 (PCE at 15 ft bgs); SVM-22 (bromodichloromethane at 14.5 ft bgs and chloroform at 5 ft and 14.5 ft bgs); SVM-24 (chloroform at 5 ft and 10 ft bgs); SVM-25 (chloroform at 5 ft and 10 ft bgs); and SVM-27 (chloroform at 5 ft and 10 ft bgs).

5. Conclusion and Recommendations

The infrequent and relatively low concentrations of VOCs detected in the shallow soil vapor (defined as the upper 10 feet of soil) do not pose an unacceptable human health risk to site workers or nearby residents. As concluded in the *Interim Remedial Action Plan (IRAP) – Implementing an NSZD Remedy* (Jacobs, 2022a) and other documents such as the *Review of the Offsite Soil Vapor Monitoring Probe Network* (Jacobs, 2020a) and *Updated Human Health Risk Assessment for the Offsite/South-Central and Offsite/Southeastern Areas* (Jacobs, 2020b), exposure pathways are largely incomplete and insignificant for the petroleum releases in groundwater, subsurface soil, and soil vapor.

Moreover, multiple lines of evidence point to the presence at the site of a clean, biologically active zone in shallow soil where aerobic biodegradation controls the diffusion of petroleum VOCs to the ground surface, further mitigating potential exposure pathways. This conclusion is also consistent with the conclusions presented in the 2006 human health risk assessment (HHRA) (Geomatrix, 2006) and the HHRAs supporting the closure of the DFSP 15-acre and 36-acre parcels (CH2M, 2017; Jacobs, 2019).

Based on the data and information presented in this report and previous quarterly remediation progress reports, and as recommended in the *Interim Remedial Action Plan (IRAP) – Implementing an NSZD Remedy* (Jacobs, 2022a), Kinder Morgan plans to submit a soil vapor monitoring work plan to the Regional Board in the first half of 2022 to optimize the SVP monitoring program. In the interim, Kinder Morgan will continue to conduct soil vapor monitoring on a quarterly basis at all available SVPs and present the results to the Regional Board for review.

6. References

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Tables

Table 1. Soil Vapor Monitoring Details

SFPP Norwalk Pump Station, Norwalk, California

Location	Easting	Northing	Top of Screen (ft. bgs.)	Bottom of Screen (ft. bgs.)
SV-10S	6540267.797	1782708.769	5	5.5
SV-12S	6539753.345	1782829.667	5	5.5
SV-14S	6540106.046	1782578.069	5	5.5
SV-17S	6541215.289	1782771.241	5	5.5
SV-2SS	6541235.093	1782827.926	0	0.5
SV-4S	6540608.994	1782810.542	5	5.5
SV-6S	6540261.953	1782812.013	5	5.5
SV-7AS	6540091.235	1782773.231	5.5	6
SV-7ASS	6540091.235	1782773.231	0	0.5
SV-7SS	6540091.235	1782773.231	0	0.5
SV-8ASS	6540091.768	1782718.355	0	0.5
SV-8S	6540091.768	1782718.355	5.5	6
SV-8SS	6540091.768	1782718.355	0	0.5
SV-9SS	6540148.554	1782688.239	0	0.5
SVM-01D	6539934.158	1782751.202	15	15.5
SVM-01S	6539934.158	1782751.202	5	5.5
SVM-02D	6539915.418	1782654.309	14.5	15
SVM-02S	6539915.418	1782654.309	5	5.5
SVM-03D	6540352.913	1782727.013	15	15.5
SVM-03S	6540352.913	1782727.013	5	5.5
SVM-04D	6540443.669	1782822.529	14.5	15
SVM-04S	6540443.669	1782822.529	5	5.5
SVM-05D	6540258.286	1782817.347	15	15.5
SVM-05S	6540258.286	1782817.347	5	5.5
SVM-06D	6540063.541	1782775.007	13	13.5
SVM-06S	6540063.541	1782775.007	7	7.5
SVM-07D	6540126.172	1782701.947	13	13.5
SVM-07S	6540126.172	1782701.947	7	7.5
SVM-08D	6540256.879	1782712.476	15	15.5
SVM-08S	6540256.879	1782712.476	5	5.5
SVM-09D	6541218.214	1782917.453	14.5	15
SVM-09S	6541218.214	1782917.453	5	5.5
SVM-10D	6540114.074	1782567.878	15	15.5
SVM-10S	6540114.074	1782567.878	7.5	8
SVM-11D	6540094.409	1783048.449	22	22.5
SVM-11M	6540094.409	1783048.449	15	15.5
SVM-11S	6540094.409	1783048.449	7	7.5
SVM-12D	6539846.272	1782941.099	22	22.5
SVM-12M	6539846.272	1782941.099	15	15.5
SVM-12S	6539846.272	1782941.099	7	7.5
SVM-13D	6540111.667	1782935.598	22	22.5
SVM-13M	6540111.667	1782935.598	15	15.5
SVM-13S	6540111.667	1782935.598	7	7.5
SVM-14D	6540263.685	1782908.941	22	22.5
SVM-14M	6540263.685	1782908.941	15	15.5
SVM-14RD	6540263.685	1782908.941	22	22.5
SVM-14RM	6540263.685	1782908.941	16	16.5
SVM-14RS	6540263.685	1782908.941	8	8.5
SVM-14S	6540263.685	1782908.941	7	7.5
SVM-15D	6540050.251	1782841.391	22	22.5

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Location	Easting	Northing	Top of Screen (ft. bgs.)	Bottom of Screen (ft. bgs.)
SVM-15M	6540050.251	1782841.391	15	15.5
SVM-15S	6540050.251	1782841.391	7	7.5
SVM-16D	6540255.489	1782631.499	22	22.5
SVM-16M	6540255.489	1782631.499	16	16.5
SVM-16S	6540255.489	1782631.499	7	7.5
SVM-17D	6541150.721	1782934.107	14.5	15
SVM-17S	6541150.721	1782934.107	5	5.5
SVM-18D	6541173.614	1783140.197	14.5	15
SVM-18S	6541173.614	1783140.197	5	5.5
SVM-19D	6541044.618	1783056.483	14.5	15
SVM-19S	6541044.618	1783056.483	5	5.5
SVM-20D	6541168.995	1783039.791	14.5	15
SVM-20S	6541168.995	1783039.791	5	5.5
SVM-21D	6541178.744	1782873.691	14.5	15
SVM-21S	6541178.744	1782873.691	5	5.5
SVM-22D	6541265.209	1782872.123	14.5	15
SVM-22S	6541265.209	1782872.123	5	5.5
SVM-23D	6541353.950	1782871.308	14.5	15
SVM-23S	6541353.950	1782871.308	5	5.5
SVM-24D	6541189.441	1782750.500	10	10.5
SVM-24S	6541189.441	1782750.500	5	5.5
SVM-25D	6541358.591	1782748.693	10	10.5
SVM-25S	6541358.591	1782748.693	5	5.5
SVM-26S	6540745.140	1782736.030	10	10.5
SVM-26D	6540745.140	1782736.030	5	5.5
SVM-27S	6541011.400	1782737.530	10	10.5
SVM-27D	6541011.400	1782737.530	5	5.5
SVP-105D	6539634.209	1782925.319	10	10.5
SVP-105S	6539634.209	1782925.319	5	5.5
SVP-106D	6539730.236	1782930.562	10	10.5
SVP-106S	6539730.236	1782930.562	5	5.5
SVP-107D	6539946.272	1782906.510	10	10.5
SVP-107S	6539946.272	1782906.510	5	5.5
SVP-108D	6540562.436	1782924.664	10	10.5
SVP-108S	6540562.436	1782924.664	5	5.5
SVP-109D	6540729.130	1782904.636	10	10.5
SVP-109S	6540729.130	1782904.636	5	5.5

Notes:

S = Shallow

M = Middle

D = Deep

SVM = Soil Vapor Monitoring

SVP = Soil Vapor Probe

SV = Historical Soil Vapor Location (no longer accessible)

Table 2. Field Measurements and Laboratory Soil Vapor Analytical Results – November 2021

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level [a, b]	Current Commercial Soil Gas Screening Level [a, b]	SVM-1-5 11/03/21 SVM-1 5-5.5	SVM-1-15 11/03/21 SVM-1 15-15.5	SVM-2-5 11/03/21 SVM-2 5-5.5	SVM-3-5 11/04/21 SVM-3 5-5.5	SVM-3-15 11/04/21 SVM-3 15-15.5	SVM-5-5 11/04/21 SVM-5 5-5.5	SVM-5-15 11/04/21 SVM-5 15-15.5	SVM-6-7 11/03/21 SVM-6 7-7.5	SVM-6-13 11/03/21 SVM-6 13-13.5	SVM-7-7 11/03/21 SVM-7 7-7.5	SVM-7-13 11/03/21 SVM-7 13-13.5	SVM-8-5 11/04/21 SVM-8 5-5.5	SVM-8-15 11/04/21 SVM-8 15-15.5
Field Measurements	Pressure	inches H_2O	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PID	ppmv	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oxygen	percent	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPCs[c]	1,2,4-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	1,2-Dichloroethane	µg/L	0.11[1A]	--	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	1,3,5-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	2-Propanol (leak test compound)	µg/L	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Benzene	µg/L	0.097[2A]/0.36[1A]	3.1[2A]	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	Ethylbenzene	µg/L	1.1[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Isopropylbenzene (aka Cumene)	µg/L	42[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	m,p-Xylenes	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Methyl tert-butyl ether (MTBE)	µg/L	11[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Naphthalene	µg/L	--	--	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	n-Butylbenzene	µg/L	210[2B]	880[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	n-Propylbenzene (propylbenzene)	µg/L	100[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	o-Xylene	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	sec-Butylbenzene	µg/L	420[2B]	1800[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	tert-Butanol (TBA)	µg/L	2.2[1A]	--	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U
	Toluene	µg/L	310[2B]/520[1B]	1300[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
Other Detected Compounds	Acetone	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Bromodichloromethane	µg/L	0.003	0.011	<0.0025 U	<0.0025 U	<0.0025 U	**0.0076**	**0.013**	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
	Chloroform	µg/L	0.004	0.018	<0.0040 U	<0.0040 U	<0.0040 U	**0.013**	**0.036**	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	Ethanol	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Tetrachloroethylene (PCE)	µg/L	0.015	0.067	<0.010 U	<0.010 U	**0.016**	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	**0.044**	<0.010 U	<0.010 U
	Trichloroethylene (TCE)	µg/L	--	--	<0.020 U	<0.020 U	**0.029**	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	TPH-G (C4-C12)	µg/L	21	86.7	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Fixed Gases	Methane	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.10 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Oxygen	% v/v	--	--	**21**	**18**	**20**	**22**	**21**	**22**	**23**	**22**	**11**	**20**	**19**	**22**	**23**
	Carbon Dioxide	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.10 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U

Notes:

[a] Source for the Indoor Air Screening Levels: DTSC, 2020. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs).* November. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

[b] Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance).* October.

[c] Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006). *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California.* December.

[1A]-https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (carcinogenic screening level) November 2020

[1B]-https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (noncarcinogenic screening level)

[2A]-https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf (carcinogenic screening level)

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http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf.

SVM-1-5 Light blue highlighting indicates offsite soil vapor probe locations.

Yellow highlighting indicates concentration exceeds human health screening level under residential scenario.

11/1/2021 - 11/4/2021 = sample dates

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

U = not detected above listed laboratory reporting limit

UJ = estimated nondetect due to quality control exceedances

µg/L = micrograms per liter

COPC = contaminant of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 2. Field Measurements and Laboratory Soil Vapor Analytical Results – November 2021

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level [a, b]	Current Commercial Soil Gas Screening Level [a, b]	SVM-9-5 11/03/21 SVM-9 5-5.5	SVM-9-14.5 11/03/21 SVM-9 14.5-15	SVM-9-14.5 DUP 11/03/21 SVM-9 14.5-15	SVM-10-15 11/03/21 SVM-10 15-15.5	SVM-11-7 11/01/21 SVM-11 7-7.5	SVM-11-15 11/01/21 SVM-11 15-15.5	SVM-11-22 11/01/21 SVM-11 22-22.5	SVM-12-7 11/01/21 SVM-12 7-7.5	SVM-12-15 11/01/21 SVM-12 15-15.5	SVM-12-22 11/01/21 SVM-12 22-22.5	SVM-13-7 11/01/21 SVM-13 7-7.5	SVM-13-15 11/01/21 SVM-13 15-15.5	SVM-13-22 11/01/21 SVM-13 22-22.5
Field Measurements	Pressure	inches H_2O	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PID	ppmv	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oxygen	percent	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPCs[c]	1,2,4-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	1,2-Dichloroethane	µg/L	0.11[1A]	--	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	1,3,5-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	2-Propanol (leak test compound)	µg/L	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Benzene	µg/L	0.097[2A]/0.36[1A]	3.1[2A]	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	Ethylbenzene	µg/L	1.1[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Isopropylbenzene (aka Cumene)	µg/L	42[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	m,p-Xylenes	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Methyl tert-butyl ether (MTBE)	µg/L	11[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Naphthalene	µg/L	--	--	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	n-Butylbenzene	µg/L	210[2B]	880[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	n-Propylbenzene (propylbenzene)	µg/L	100[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	o-Xylene	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	sec-Butylbenzene	µg/L	420[2B]	1800[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	tert-Butanol (TBA)	µg/L	2.2[1A]	--	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U
	Toluene	µg/L	310[2B]/520[1B]	1300[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
Other Detected Compounds	Acetone	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Bromodichloromethane	µg/L	0.003	0.011	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
	Chloroform	µg/L	0.004	0.018	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	Ethanol	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Tetrachloroethylene (PCE)	µg/L	0.015	0.067	**0.055**	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	**0.023**	<0.010 U	<0.010 U	**0.022**	<0.010 U	<0.010 U	<0.010 U
	Trichloroethylene (TCE)	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	TPH-G (C4-C12)	µg/L	21	86.7	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Fixed Gases	Methane	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Oxygen	% v/v	--	--	**17**	**22**	**22**	**22**	**22**	**21**	**14**	**21**	**18**	**5.4**	**21**	**21**	**16**
	Carbon Dioxide	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	**14**	<0.20 U	<0.20 U	<0.20 U

Notes:

[a] Source for the Indoor Air Screening Levels: DTSC, 2020. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs).* November. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

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SVM-1-5 Light blue highlighting indicates offsite soil vapor probe locations.

Yellow highlighting indicates concentration exceeds human health screening level under residential scena

11/1/2021 - 11/4/2021 = sample dates

SVM-1 = sample location

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% v/v = percent volume by volume

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COPC = contaminant of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 2. Field Measurements and Laboratory Soil Vapor Analytical Results – November 2021

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level [a, b]	Current Commercial Soil Gas Screening Level [a, b]	SVM-14R-8 11/01/21 SVM-14R 8-8.5	SVM-14R-16 11/01/21 SVM-14R 16-16.5	SVM-14R-22 11/01/21 SVM-14R 22-22.5	SVM-15-7 11/03/21 SVM-15 7-7.5	SVM-15-15 11/03/21 SVM-15 15-15.5	SVM-15-22 11/03/21 SVM-15 22-22.5	SVM-16-7 11/04/21 SVM-16 7-7.5	SVM-16-7-DUP 11/04/21 SVM-16 7-7.5	SVM-16-16 11/04/21 SVM-16 16-16.5	SVM-16-22 11/04/21 SVM-16 22-22.5	SVM-17-5 11/02/21 SVM-17 5-5.5	SVM-17-14.5 11/02/21 SVM-17 14.5-15	SVM-18-5 11/01/21 SVM-18 5-5.5
Field Measurements	Pressure	inches H_2O	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PID	ppmv	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oxygen	percent	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPCs[c]	1,2,4-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	1,2-Dichloroethane	µg/L	0.11[1A]	--	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	1,3,5-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	2-Propanol (leak test compound)	µg/L	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Benzene	µg/L	0.097[2A]/0.36[1A]	3.1[2A]	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	Ethylbenzene	µg/L	1.1[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Isopropylbenzene (aka Cumene)	µg/L	42[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	m,p-Xylenes	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Methyl tert-butyl ether (MTBE)	µg/L	11[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Naphthalene	µg/L	--	--	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	n-Butylbenzene	µg/L	210[2B]	880[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	n-Propylbenzene (propylbenzene)	µg/L	100[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	o-Xylene	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	sec-Butylbenzene	µg/L	420[2B]	1800[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	tert-Butanol (TBA)	µg/L	2.2[1A]	--	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U
	Toluene	µg/L	310[2B]/520[1B]	1300[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
Other Detected Compounds	Acetone	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Bromodichloromethane	µg/L	0.003	0.011	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
	Chloroform	µg/L	0.004	0.018	<0.0040 U	**0.042**	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	Ethanol	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Tetrachloroethylene (PCE)	µg/L	0.015	0.067	<0.010 U	<0.010 U	<0.010 U	<0.010 U	**0.016**	**0.010**	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U
	Trichloroethylene (TCE)	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	TPH-G (C4-C12)	µg/L	21	86.7	<0.50 U	<0.50 U	**0.60**	<0.50 U	<0.50 U	<0.50 U	<0.50 U	**0.70**	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Fixed Gases	Methane	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.10 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Oxygen	% v/v	--	--	**22**	**21**	**5.4**	**22**	**20**	**19**	**22**	**22**	**22**	**13**	**23**	**23**	**21**
	Carbon Dioxide	% v/v	--	--	<0.20 U	<0.20 U	**11**	<0.10 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U

Notes:

[a] Source for the Indoor Air Screening Levels: DTSC, 2020. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs).* November. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

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Table 2. Field Measurements and Laboratory Soil Vapor Analytical Results – November 2021

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level [a, b]	Current Commercial Soil Gas Screening Level [a, b]	SVM-18-14.5 11/01/21 SVM-18 14.5-15	SVM-18-14.5 DUP 11/01/21 SVM-18 14.5-15	SVM-19-5 11/01/21 SVM-19 5-5.5	SVM-20-5 11/01/21 SVM-20 5-5.5	SVM-20-14.5 11/01/21 SVM-20 14.5-15	SVM-21-5 11/02/21 SVM-21 5-5.5	SVM-21-14.5 11/02/21 SVM-21 14.5-15	SVM-22-5 11/02/21 SVM-22 5-5.5	SVM-22-14.5 11/02/21 SVM-22 14.5-15	SVM-23-5 11/02/21 SVM-23 5-5.5	SVM-23-14.5 11/02/21 SVM-23 14.5-15	SVM-24-5 11/02/21 SVM-24 5-5.5	SVM-24-10 11/02/21 SVM-24 10-10.5
Field Measurements	Pressure	inches H_2O	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PID	ppmv	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oxygen	percent	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPCs[c]	1,2,4-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	1,2-Dichloroethane	µg/L	0.11[1A]	--	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	1,3,5-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	2-Propanol (leak test compound)	µg/L	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ
	Benzene	µg/L	0.097[2A]/0.36[1A]	3.1[2A]	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	Ethylbenzene	µg/L	1.1[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Isopropylbenzene (aka Cumene)	µg/L	42[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	m,p-Xylenes	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Methyl tert-butyl ether (MTBE)	µg/L	11[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Naphthalene	µg/L	--	--	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	n-Butylbenzene	µg/L	210[2B]	880[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	n-Propylbenzene (propylbenzene)	µg/L	100[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	o-Xylene	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	sec-Butylbenzene	µg/L	420[2B]	1800[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	tert-Butanol (TBA)	µg/L	2.2[1A]	--	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U
	Toluene	µg/L	310[2B]/520[1B]	1300[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
Other Detected Compounds	Acetone	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Bromodichloromethane	µg/L	0.003	0.011	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	**0.0054**	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
	Chloroform	µg/L	0.004	0.018	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	**0.016**	**0.18**	<0.0040 U	<0.0040 U	**0.026**	**0.0049**
	Ethanol	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Tetrachloroethylene (PCE)	µg/L	0.015	0.067	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U
	Trichloroethylene (TCE)	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	TPH-G (C4-C12)	µg/L	21	86.7	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Fixed Gases	Methane	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.10 U	<0.20 U	<0.20 U	<0.20 U	**0.27**	<0.20 U	<0.20 U	<0.20 U
	Oxygen	% v/v	--	--	**22**	**22**	**22**	**22 J**	**23**	**21**	**22**	**23**	**22**	**22**	**22**	**22**	**23**
	Carbon Dioxide	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.10 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U

Notes:

[a] Source for the Indoor Air Screening Levels: DTSC, 2020. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs).* November. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

[b] Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation* and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). October.

[c] Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006). *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California.* December.

[1A] https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (carcinogenic screening level) November 2020

[1B] https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (noncarcinogenic screening level)

[2A] https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf (carcinogenic screening level)

[2B] https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf (noncarcinogenic screening level)

http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf.

SVM-1-5 Light blue highlighting indicates offsite soil vapor probe locations.

Yellow highlighting indicates concentration exceeds human health screening level under residential scena

11/1/2021 - 11/4/2021 = sample dates

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

U = not detected above listed laboratory reporting limit

UJ = estimated nondetect due to quality control exceedances

µg/L = micrograms per liter

COPC = contaminant of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 2. Field Measurements and Laboratory Soil Vapor Analytical Results – November 2021

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level [a, b]	Current Commercial Soil Gas Screening Level [a, b]	SVM-25-5 11/02/21 SVM-25 5-5.5	SVM-25-10 11/02/21 SVM-25 10-10.5	SVM-26-5 11/02/21 SVM-26 5-5.5	SVM-26-10 11/02/21 SVM-26 10-10.5	SVM-27-5 11/02/21 SVM-27 5-5.5	SVM-27-10 11/02/21 SVM-27 10-10.5	AMBIENT AIR 11/01/21	AMBIENT AIR 11/02/21	AMBIENT AIR 11/03/21	AMBIENT AIR 11/04/21
Field Measurements	Pressure	inches H_2O	--	--	--	--	--	--	--	--	--	--	--	--
	PID	ppmv	--	--	--	--	--	--	--	--	--	--	--	--
	Oxygen	percent	--	--	--	--	--	--	--	--	--	--	--	--
COPCs[c]	1,2,4-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	1,2-Dichloroethane	µg/L	0.11[1A]	--	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U	**0.0045**	<0.0040 U	**0.0044**	<0.0040 U	<0.0040 U	<0.0040 U
	1,3,5-Trimethylbenzene	µg/L	6.3[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	2-Propanol (leak test compound)	µg/L	--	--	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 UJ	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Benzene	µg/L	0.097[2A]/0.36[1A]	3.1[2A]	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	Ethylbenzene	µg/L	1.1[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Isopropylbenzene (aka Cumene)	µg/L	42[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	m,p-Xylenes	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Methyl tert-butyl ether (MTBE)	µg/L	11[1A]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	Naphthalene	µg/L	--	--	**0.0082**	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U	**0.0039**	<0.0030 U	<0.0030 U	<0.0030 U	<0.0030 U
	n-Butylbenzene	µg/L	210[2B]	880[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	n-Propylbenzene (propylbenzene)	µg/L	100[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	o-Xylene	µg/L	10[1B]	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	sec-Butylbenzene	µg/L	420[2B]	1800[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	tert-Butanol (TBA)	µg/L	2.2[1A]	--	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U
	Toluene	µg/L	310[2B]/520[1B]	1300[2B]	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
Other Detected Compounds	Acetone	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	**0.026**	<0.020 U	<0.020 U	<0.020 U
	Bromodichloromethane	µg/L	0.003	0.011	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U	<0.0025 U
	Chloroform	µg/L	0.004	0.018	**0.016**	**0.017**	<0.0040 U	<0.0040 U	**0.0057**	**0.050**	<0.0040 U	<0.0040 U	<0.0040 U	<0.0040 U
	Ethanol	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	**0.030**	<0.020 U	<0.020 U	<0.020 U
	Tetrachloroethylene (PCE)	µg/L	0.015	0.067	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U	<0.010 U
	Trichloroethylene (TCE)	µg/L	--	--	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U	<0.020 U
	TPH-G (C4-C12)	µg/L	21	86.7	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Fixed Gases	Methane	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	**0.34**	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U
	Oxygen	% v/v	--	--	**26**	**21**	**22**	**23**	**22**	**22**	**21**	**21**	**21**	**22**
	Carbon Dioxide	% v/v	--	--	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U	<0.20 U

Notes:

[a] Source for the Indoor Air Screening Levels: DTSC, 2020. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs).* November. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

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[1A]-https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (carcinogenic screening level) November 2020

[1B]-https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables (noncarcinogenic screening level)

[2A]-https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf (carcinogenic screening level)

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http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf.

SVM-1-5 Light blue highlighting indicates offsite soil vapor probe locations.

Yellow highlighting indicates concentration exceeds human health screening level under residential scena

11/1/2021 - 11/4/2021 = sample dates

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SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

U = not detected above listed laboratory reporting limit

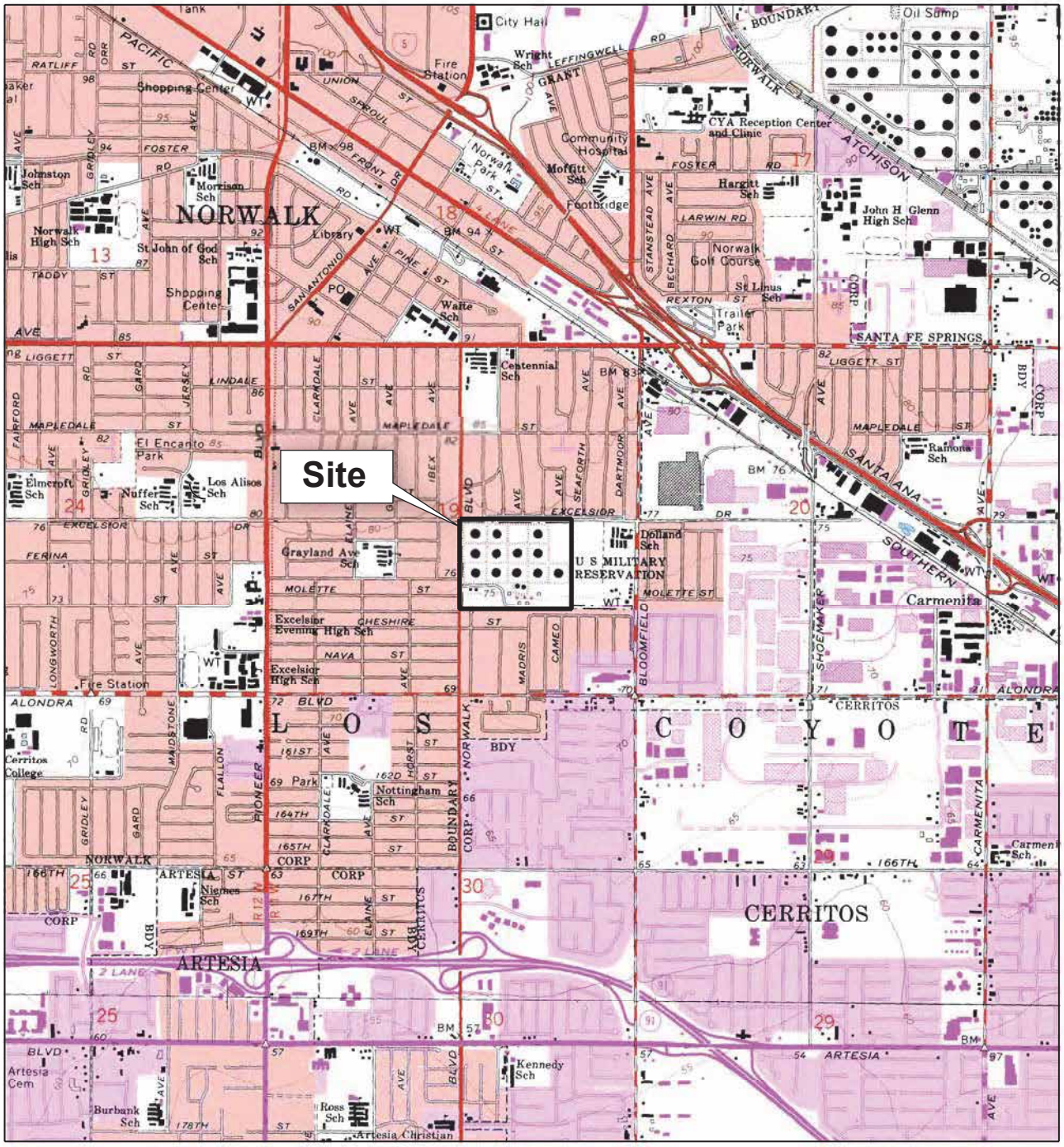
UJ = estimated nondetect due to quality control exceedances

µg/L = micrograms per liter

COPC = contaminant of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Figures



North

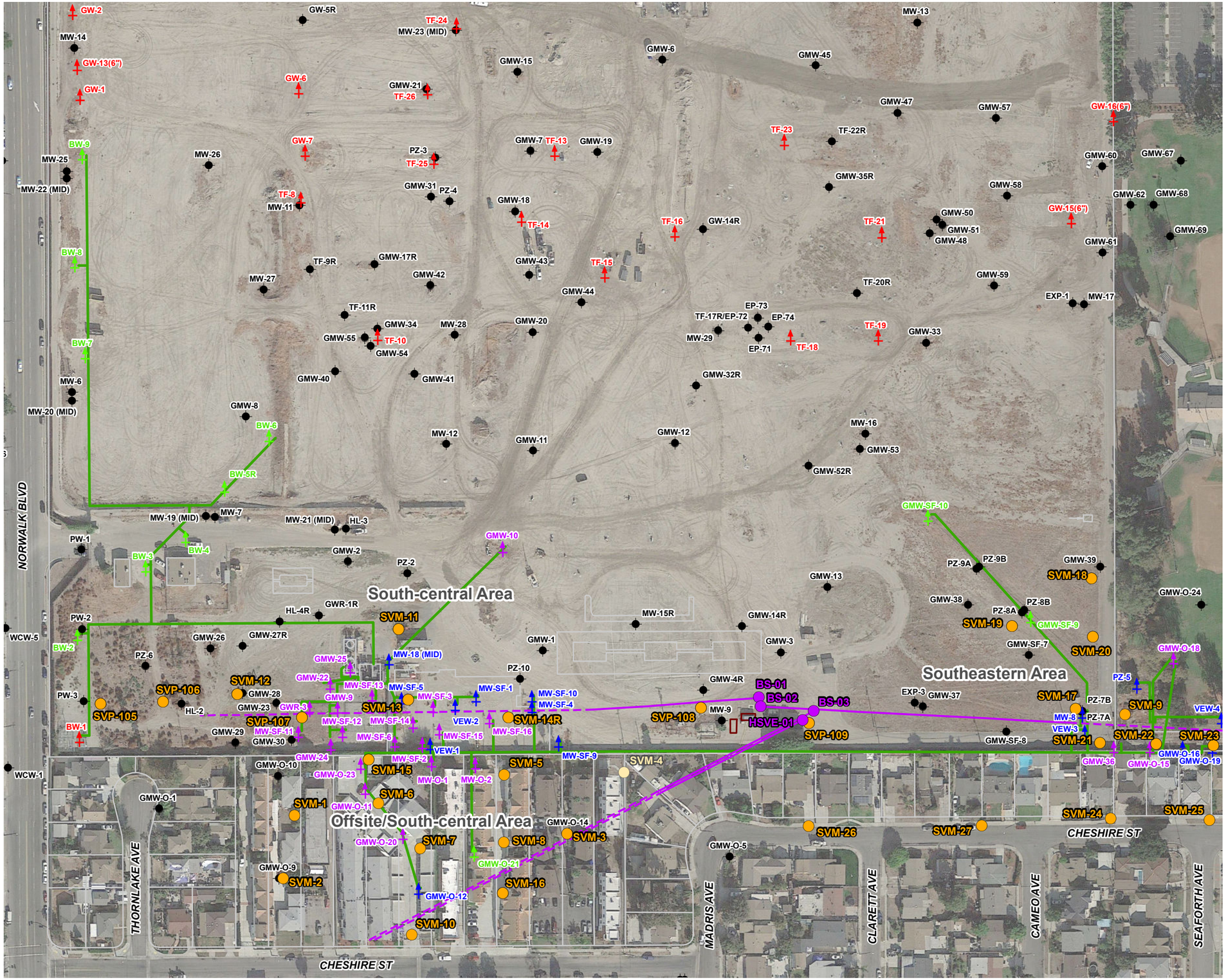
0 1200 2400

Approximate scale in feet

Figure 1. Site Location Map
SFPP Norwalk Pump Station
Norwalk, California

BASEMAP MODIFIED FROM U.S.G.S. 7.5 MINUTE QUADRANGLE MAP
LOS ALAMITOS 1964, CALIFORNIA. PHOTO-REVISED 1981.
WHITTIER 1965, CALIFORNIA. PHOTO-REVISED 1981.

Jacobs



LEGEND

- Soil Vapor Probe/Soil Vapor Monitoring Probe
- Destroyed Soil Vapor Probe/Soil Vapor Monitoring Probe
- Horizontal Biosparge Well Entry Point
- Existing Groundwater Monitoring Well
- Existing Remediation Well
- Kinder Morgan Combined Soil Vapor and Total Fluids Extraction Wells
- Kinder Morgan Soil Vapor Extraction Wells
- Kinder Morgan Total Fluids and/or Groundwater Extraction Wells
- Kinder Morgan Remediation Piping Layout (Above Ground and Below Ground)
- Horizontal Biosparge Well (Dashed Line Depicts Approximate Lateral Extent of Well Screen)
- Air Compressor System

Imagery Source:
Google Earth December 3, 2017.

N

0 75 150 300
Feet

1 inch = 150 feet

Figure 2. Remediation System Layout
SFPP Norwalk Pump Station
Norwalk, California

Jacobs

\\DC1VS01\GISPROJ\K\KINDERMORGAN\NORWALK\MAPFILES\2022\FIGURE_2_REMEDIATION_SYSTEMS_LAYOUT.MXD AESPEJO 1/27/2022

Attachment
Laboratory Analytical Reports

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

December 03, 2021

Eric Davis

CH2M Hill, Inc.

P.O. Box 241329

Denver, CO 80224

Re : KMEP Norwalk Biosparge Startup / 693142

MB187341 / 1K01011

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 11/01/21 13:19 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Allen Aminian

QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Fixed Gases

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Ambiant Air	1K01011-01	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-7	1K01011-02	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-15	1K01011-03	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-22	1K01011-04	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-11-7	1K01011-05	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-15	1K01011-06	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-22	1K01011-07	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-13-7	1K01011-08	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-15	1K01011-09	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-22	1K01011-10	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-14R-8	1K01011-11	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-16	1K01011-12	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-22	1K01011-13	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-20-5	1K01011-14	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-20-14.5	1K01011-15	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-18-5	1K01011-16	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-18-14.5	1K01011-17	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-18-14.5 DUP	1K01011-18	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-19-5	1K01011-19	Vapor	10	11/01/21 11:40	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Ambient Air	1K01011-20	Vapor	10	11/02/21 07:40	11/01/21 13:19
SVM-26-10	1K01011-21	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-26-5	1K01011-22	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-27-5	1K01011-23	Vapor	10	11/02/21 08:23	11/01/21 13:19
SVM-27-10	1K01011-24	Vapor	10	11/02/21 08:25	11/01/21 13:19
SVM-24-5	1K01011-25	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-24-10	1K01011-26	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-25-5	1K01011-27	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-25-10	1K01011-28	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-21-5	1K01011-29	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-21-14.5	1K01011-30	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-23-5	1K01011-31	Vapor	10	11/02/21 11:00	11/01/21 13:19
SVM-23-14.5	1K01011-32	Vapor	10	11/02/21 11:00	11/01/21 13:19
SVM-22-5	1K01011-33	Vapor	10	11/02/21 11:30	11/01/21 13:19
SVM-22-14.5	1K01011-34	Vapor	10	11/02/21 11:30	11/01/21 13:19
SVM-17-5	1K01011-35	Vapor	10	11/02/21 12:00	11/01/21 13:19
SVM-17-14.5	1K01011-36	Vapor	10	11/02/21 12:00	11/01/21 13:19
SVM-15-7	1K01011-37	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-15	1K01011-38	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-22	1K01011-39	Vapor	10	11/03/21 08:22	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Ambient Air	1K01011-40	Vapor	10	11/03/21 08:20	11/01/21 13:19
SVM-6-7	1K01011-41	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-6-13	1K01011-42	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-7-7	1K01011-43	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-7-13	1K01011-44	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-10-15	1K01011-45	Vapor	10	11/03/21 09:35	11/01/21 13:19
SVM-9-5	1K01011-46	Vapor	10	11/03/21 10:10	11/01/21 13:19
SVM-9-14.5	1K01011-47	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-9-14.5 DUP	1K01011-48	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-1-5	1K01011-49	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-1-15	1K01011-50	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-2-5	1K01011-51	Vapor	10	11/03/21 11:20	11/01/21 13:19
Ambient Air	1K01011-52	Vapor	10	11/04/21 08:34	11/01/21 13:19
SVM-3-5	1K01011-53	Vapor	10	11/04/21 08:37	11/01/21 13:19
SVM-3-15	1K01011-54	Vapor	10	11/04/21 08:37	11/01/21 13:19
SVM-5-5	1K01011-55	Vapor	10	11/04/21 09:05	11/01/21 13:19
SVM-5-15	1K01011-56	Vapor	10	11/04/21 09:05	11/01/21 13:19
SVM-8-5	1K01011-57	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-8-15	1K01011-58	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-16-7	1K01011-59	Vapor	10	11/04/21 10:05	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-16-7-DUP	1K01011-60	Vapor	10	11/04/21 10:05	11/01/21 13:19
SVM-16-16	1K01011-61	Vapor	10	11/04/21 09:58	11/01/21 13:19
SVM-16-22	1K01011-62	Vapor	10	11/04/21 09:59	11/01/21 13:19
TO-15 (Mid Level)					
Ambiant Air	1K01011-01	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-7	1K01011-02	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-15	1K01011-03	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-22	1K01011-04	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-11-7	1K01011-05	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-15	1K01011-06	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-22	1K01011-07	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-13-7	1K01011-08	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-15	1K01011-09	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-22	1K01011-10	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-14R-8	1K01011-11	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-16	1K01011-12	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-22	1K01011-13	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-20-5	1K01011-14	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-20-14.5	1K01011-15	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-18-5	1K01011-16	Vapor	10	11/01/21 11:25	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-18-14.5	1K01011-17	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-18-14.5 DUP	1K01011-18	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-19-5 Ambient	1K01011-19	Vapor	10	11/01/21 11:40	11/01/21 13:19
Air SVM-26-10	1K01011-20	Vapor	10	11/02/21 07:40	11/01/21 13:19
SVM-26-5	1K01011-21	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-27-5	1K01011-22	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-27-10	1K01011-23	Vapor	10	11/02/21 08:23	11/01/21 13:19
SVM-24-5	1K01011-24	Vapor	10	11/02/21 08:25	11/01/21 13:19
SVM-24-10	1K01011-25	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-25-5	1K01011-26	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-25-10	1K01011-27	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-21-5	1K01011-28	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-21-14.5	1K01011-29	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-23-5	1K01011-30	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-23-14.5	1K01011-31	Vapor	10	11/02/21 11:00	11/01/21 13:19
SVM-22-5	1K01011-32	Vapor	10	11/02/21 11:00	11/01/21 13:19
SVM-22-14.5	1K01011-33	Vapor	10	11/02/21 11:30	11/01/21 13:19
SVM-17-5	1K01011-34	Vapor	10	11/02/21 11:30	11/01/21 13:19
SVM-17-14.5	1K01011-35	Vapor	10	11/02/21 12:00	11/01/21 13:19
	1K01011-36	Vapor	10	11/02/21 12:00	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-15-7	1K01011-37	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-15	1K01011-38	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-22	1K01011-39	Vapor	10	11/03/21 08:22	11/01/21 13:19
Ambient Air	1K01011-40	Vapor	10	11/03/21 08:20	11/01/21 13:19
SVM-6-7	1K01011-41	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-6-13	1K01011-42	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-7-7	1K01011-43	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-7-13	1K01011-44	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-10-15	1K01011-45	Vapor	10	11/03/21 09:35	11/01/21 13:19
SVM-9-5	1K01011-46	Vapor	10	11/03/21 10:10	11/01/21 13:19
SVM-9-14.5	1K01011-47	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-9-14.5 DUP	1K01011-48	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-1-5	1K01011-49	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-1-15	1K01011-50	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-2-5	1K01011-51	Vapor	10	11/03/21 11:20	11/01/21 13:19
Ambient Air	1K01011-52	Vapor	10	11/04/21 08:34	11/01/21 13:19
SVM-3-5	1K01011-53	Vapor	10	11/04/21 08:37	11/01/21 13:19
SVM-3-15	1K01011-54	Vapor	10	11/04/21 08:37	11/01/21 13:19
SVM-5-5	1K01011-55	Vapor	10	11/04/21 09:05	11/01/21 13:19
SVM-5-15	1K01011-56	Vapor	10	11/04/21 09:05	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-8-5	1K01011-57	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-8-15	1K01011-58	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-16-7	1K01011-59	Vapor	10	11/04/21 10:05	11/01/21 13:19
SVM-16-7-DUP	1K01011-60	Vapor	10	11/04/21 10:05	11/01/21 13:19
SVM-16-16	1K01011-61	Vapor	10	11/04/21 09:58	11/01/21 13:19
SVM-16-22	1K01011-62	Vapor	10	11/04/21 09:59	11/01/21 13:19
TO-3					
Ambiant Air	1K01011-01	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-7	1K01011-02	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-15	1K01011-03	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-12-22	1K01011-04	Vapor	10	11/01/21 08:35	11/01/21 13:19
SVM-11-7	1K01011-05	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-15	1K01011-06	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-11-22	1K01011-07	Vapor	10	11/01/21 09:05	11/01/21 13:19
SVM-13-7	1K01011-08	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-15	1K01011-09	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-13-22	1K01011-10	Vapor	10	11/01/21 09:38	11/01/21 13:19
SVM-14R-8	1K01011-11	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-16	1K01011-12	Vapor	10	11/01/21 10:20	11/01/21 13:19
SVM-14R-22	1K01011-13	Vapor	10	11/01/21 10:20	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-20-5	1K01011-14	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-20-14.5	1K01011-15	Vapor	10	11/01/21 10:55	11/01/21 13:19
SVM-18-5	1K01011-16	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-18-14.5	1K01011-17	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-18-14.5 DUP	1K01011-18	Vapor	10	11/01/21 11:25	11/01/21 13:19
SVM-19-5 Ambient	1K01011-19	Vapor	10	11/01/21 11:40	11/01/21 13:19
Air SVM-26-10	1K01011-20	Vapor	10	11/02/21 07:40	11/01/21 13:19
SVM-26-5	1K01011-21	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-27-5	1K01011-22	Vapor	10	11/02/21 08:00	11/01/21 13:19
SVM-27-10	1K01011-23	Vapor	10	11/02/21 08:23	11/01/21 13:19
SVM-24-5	1K01011-24	Vapor	10	11/02/21 08:25	11/01/21 13:19
SVM-24-10	1K01011-25	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-25-5	1K01011-26	Vapor	10	11/02/21 09:05	11/01/21 13:19
SVM-25-10	1K01011-27	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-21-5	1K01011-28	Vapor	10	11/02/21 09:45	11/01/21 13:19
SVM-21-14.5	1K01011-29	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-23-5	1K01011-30	Vapor	10	11/02/21 10:30	11/01/21 13:19
SVM-23-14.5	1K01011-31	Vapor	10	11/02/21 11:00	11/01/21 13:19
SVM-22-5	1K01011-32	Vapor	10	11/02/21 11:00	11/01/21 13:19
	1K01011-33	Vapor	10	11/02/21 11:30	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-22-14.5	1K01011-34	Vapor	10	11/02/21 11:30	11/01/21 13:19
SVM-17-5	1K01011-35	Vapor	10	11/02/21 12:00	11/01/21 13:19
SVM-17-14.5	1K01011-36	Vapor	10	11/02/21 12:00	11/01/21 13:19
SVM-15-7	1K01011-37	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-15	1K01011-38	Vapor	10	11/03/21 08:22	11/01/21 13:19
SVM-15-22	1K01011-39	Vapor	10	11/03/21 08:22	11/01/21 13:19
Ambient Air	1K01011-40	Vapor	10	11/03/21 08:20	11/01/21 13:19
SVM-6-7	1K01011-41	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-6-13	1K01011-42	Vapor	10	11/03/21 08:45	11/01/21 13:19
SVM-7-7	1K01011-43	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-7-13	1K01011-44	Vapor	10	11/03/21 09:10	11/01/21 13:19
SVM-10-15	1K01011-45	Vapor	10	11/03/21 09:35	11/01/21 13:19
SVM-9-5	1K01011-46	Vapor	10	11/03/21 10:10	11/01/21 13:19
SVM-9-14.5	1K01011-47	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-9-14.5 DUP	1K01011-48	Vapor	10	11/03/21 10:30	11/01/21 13:19
SVM-1-5	1K01011-49	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-1-15	1K01011-50	Vapor	10	11/03/21 10:55	11/01/21 13:19
SVM-2-5	1K01011-51	Vapor	10	11/03/21 11:20	11/01/21 13:19
Ambient Air	1K01011-52	Vapor	10	11/04/21 08:34	11/01/21 13:19
SVM-3-5	1K01011-53	Vapor	10	11/04/21 08:37	11/01/21 13:19

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-3-15	1K01011-54	Vapor	10	11/04/21 08:37	11/01/21 13:19
SVM-5-5	1K01011-55	Vapor	10	11/04/21 09:05	11/01/21 13:19
SVM-5-15	1K01011-56	Vapor	10	11/04/21 09:05	11/01/21 13:19
SVM-8-5	1K01011-57	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-8-15	1K01011-58	Vapor	10	11/04/21 09:25	11/01/21 13:19
SVM-16-7	1K01011-59	Vapor	10	11/04/21 10:05	11/01/21 13:19
SVM-16-7-DUP	1K01011-60	Vapor	10	11/04/21 10:05	11/01/21 13:19
SVM-16-16	1K01011-61	Vapor	10	11/04/21 09:58	11/01/21 13:19
SVM-16-22	1K01011-62	Vapor	10	11/04/21 09:59	11/01/21 13:19

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
			Fixed Gases by TCD					
Oxygen	Ambiant Air	**21**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-12-7	**21**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-12-15	**18**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-12-22	**5.4**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Carbon Dioxide	SVM-12-22	**14**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-11-7	**22**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-11-15	**21**	0.20	% by Volume	2	11/05/21	11/05/21	ASTM D1946M
Oxygen	SVM-11-22	**14**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-13-7	**21**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-13-15	**21**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-13-22	**16**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-14R-8	**22**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-14R-16	**21**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-14R-22	**5.4**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Carbon Dioxide	SVM-14R-22	**11**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-20-5	**22**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-20-14.5	**23**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-18-5	**21**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-18-14.5	**22**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-18-14.5 DUP	**22**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M
Oxygen	SVM-19-5	**22**	0.20	% by Volume	2	11/08/21	11/08/21	ASTM D1946M

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	Ambient Air	**21**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Methane	SVM-26-10	**0.34**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-26-10	**23**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-26-5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-27-5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-27-10	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-24-5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-24-10	**23**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-25-5	**26**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-25-10	**21**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-21-5	**21**	0.10	% by Volume	1	11/12/21	11/12/21	ASTM D1946M

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-21-14.5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Methane	SVM-23-5	**0.27**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-23-5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-23-14.5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-22-5	**23**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-22-14.5	**22**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-17-5	**23**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-17-14.5	**23**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-15-7	**22**	0.10	% by Volume	1	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-15-15	**20**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M
Oxygen	SVM-15-22	**19**	0.20	% by Volume	2	11/12/21	11/12/21	ASTM D1946M

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	Ambient Air	**21**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-6-7	**22**	0.10	% by Volume	1	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-6-13	**11**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-7-7	**20**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-7-13	**19**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-10-15	**22**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-9-5	**17**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-9-14.5	**22**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-9-14.5 DUP	**22**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-1-5	**21**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-1-15	**18**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-2-5	**20**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	Ambient Air	**22**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-3-5	**22**	0.20	% by Volume	2	11/15/21	11/15/21	ASTM D1946M
Oxygen	SVM-3-15	**21**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-5-5	**22**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-5-15	**23**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-8-5	**22**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-8-15	**23**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-16-7	**22**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-16-7-DUP	**22**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
Oxygen	SVM-16-16	**22**	0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result		MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-16-22	**13**		0.20	% by Volume	2	11/16/21	11/16/21	ASTM D1946M
		VOCs by EPA TO-3							
Gasoline Range Organics (GRO)	SVM-14R-22	**0.60**		0.50	ug/L	1	11/03/21	11/03/21	TO-3
Gasoline Range Organics (GRO)	SVM-16-7-DUP	**0.70**		0.50	ug/L	1	12/01/21	12/01/21	TO-3
		VOCs by GCMS EPA TO-15 (Mid Level)							
Acetone	Ambiant Air	**0.026**		0.020	ug/L	1	11/03/21	11/03/21	TO-15
1,2-Dichloroethane (EDC)	Ambiant Air	**0.0044**		0.0040	ug/L	1	11/03/21	11/03/21	TO-15
Ethanol	Ambiant Air	**0.030**		0.020	ug/L	1	11/03/21	11/03/21	TO-15
Tetrachloroethylene (PCE)	SVM-12-22	**0.022**		0.010	ug/L	1	11/03/21	11/03/21	TO-15
Tetrachloroethylene (PCE)	SVM-11-22	**0.023**		0.010	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-14R-16	**0.042**		0.0040	ug/L	1	11/03/21	11/03/21	TO-15
Chloroform	SVM-27-5	**0.0057**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
1,2-Dichloroethane (EDC)	SVM-27-5	**0.0045**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-27-10	**0.050**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Naphthalene	SVM-27-10	**0.0039**		0.0030	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-24-5	**0.026**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-24-10	**0.0049**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-25-5	**0.016**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Naphthalene	SVM-25-5	**0.0082**		0.0030	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-25-10	**0.017**		0.0040	ug/L	1	11/03/21	11/04/21	TO-15
Chloroform	SVM-22-5	**0.016**		0.0040	ug/L	1	11/03/21	11/05/21	TO-15
Bromodichloromethane	SVM-22-14.5	**0.0054**		0.0025	ug/L	1	11/03/21	11/05/21	TO-15
Chloroform	SVM-22-14.5	**0.18**	**E**	0.0040	ug/L	1	11/03/21	11/05/21	TO-15
Tetrachloroethylene (PCE)	SVM-15-15	**0.016**		0.010	ug/L	1	11/08/21	11/08/21	TO-15
Tetrachloroethylene (PCE)	SVM-15-22	**0.010**		0.010	ug/L	1	11/08/21	11/08/21	TO-15

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Tetrachloroethylene (PCE)	SVM-7-13	**0.044**	0.010	ug/L	1	11/08/21	11/08/21	TO-15
Tetrachloroethylene (PCE)	SVM-9-5	**0.055**	0.010	ug/L	1	11/08/21	11/09/21	TO-15
Tetrachloroethylene (PCE)	SVM-2-5	**0.016**	0.010	ug/L	1	11/12/21	11/13/21	TO-15
Trichloroethylene (TCE)	SVM-2-5	**0.029**	0.020	ug/L	1	11/12/21	11/13/21	TO-15
Bromodichloromethane	SVM-3-5	**0.0076**	0.0025	ug/L	1	11/12/21	11/13/21	TO-15
Chloroform	SVM-3-5	**0.013**	0.0040	ug/L	1	11/12/21	11/13/21	TO-15
Bromodichloromethane	SVM-3-15	**0.013**	0.0025	ug/L	1	11/12/21	11/13/21	TO-15
Chloroform	SVM-3-15	**0.036**	0.0040	ug/L	1	11/12/21	11/13/21	TO-15

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-01	1K01011-02	1K01011-03	1K01011-04	
Client ID No:	Ambiant Air	SVM-12-7	SVM-12-15	SVM-12-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	91%	91%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-05	1K01011-06	1K01011-07	1K01011-08	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	89%	89%	88%	90%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-09	1K01011-10	1K01011-11	1K01011-12	
Client ID No:	SVM-13-15	SVM-13-22	SVM-14R-8	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	87%	119%	116%	113%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-13	1K01011-14	1K01011-15	1K01011-16	
Client ID No:	SVM-14R-22	SVM-20-5	SVM-20-14.5	SVM-18-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	**0.60**	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	112%	117%	113%	114%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/2021	11/01/2021	11/01/2021	11/02/2021	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-17	1K01011-18	1K01011-19	1K01011-20	
Client ID No:	SVM-18-14.5	SVM-18-14.5 DUP	SVM-19-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	111%	109%	114%	112%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-21	1K01011-22	1K01011-23	1K01011-24	
Client ID No:	SVM-26-10	SVM-26-5	SVM-27-5	SVM-27-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	91%	92%	92%	70-130

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-25	1K01011-26	1K01011-27	1K01011-28	
Client ID No:	SVM-24-5	SVM-24-10	SVM-25-5	SVM-25-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	91%	91%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	**AA Project No:**	MB187341
Project No:	693142	**Date Received:**	11/01/21
Project Name:	KMEP Norwalk Biosparge Startup	**Date Reported:**	12/03/21
Method:	VOCs by EPA TO-3	**Units:**	ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-29	1K01011-30	1K01011-31	1K01011-32	
Client ID No:	SVM-21-5	SVM-21-14.5	SVM-23-5	SVM-23-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	92%	90%	90%	90%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-33	1K01011-34	1K01011-35	1K01011-36	
Client ID No:	SVM-22-5	SVM-22-14.5	SVM-17-5	SVM-17-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	89%	92%	98%	101%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-37	1K01011-38	1K01011-39	1K01011-40	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	93%	90%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-41	1K01011-42	1K01011-43	1K01011-44	
Client ID No:	SVM-6-7	SVM-6-13	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	92%	90%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-45	1K01011-46	1K01011-47	1K01011-48	
Client ID No:	SVM-10-15	SVM-9-5	SVM-9-14.5	SVM-9-14.5 DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	94%	89%	91%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/04/21	
Date Prepared:	11/08/21	11/08/21	11/12/21	11/12/21	
Date Analyzed:	11/08/21	11/08/21	11/13/21	11/13/21	
AA ID No:	1K01011-49	1K01011-50	1K01011-51	1K01011-52	
Client ID No:	SVM-1-5	SVM-1-15	SVM-2-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	90%	90%	91%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/13/21	11/13/21	11/13/21	11/13/21	
AA ID No:	1K01011-53	1K01011-54	1K01011-55	1K01011-56	
Client ID No:	SVM-3-5	SVM-3-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	89%	89%	89%	91%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	12/01/21	12/01/21	12/01/21	
Date Analyzed:	11/13/21	12/01/21	12/01/21	12/01/21	
AA ID No:	1K01011-57	1K01011-58	1K01011-59	1K01011-60	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-7-DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-3 (TO-3)					
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	**0.70**	0.50
Surrogates					**%REC Limits**
4-Bromofluorobenzene	91%	95%	92%	97%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	
Date Prepared:	12/01/21	12/01/21	
Date Analyzed:	12/01/21	12/01/21	
AA ID No:	1K01011-61	1K01011-62	
Client ID No:	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL
TO-3 (TO-3)			
Gasoline Range Organics (GRO)	<0.50	<0.50	0.50
Surrogates			**%REC Limits**
4-Bromofluorobenzene	92%	94%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-01	1K01011-02	1K01011-03	1K01011-04	
Client ID No:	Ambiant Air	SVM-12-7	SVM-12-15	SVM-12-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	**0.026**	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	**0.0044**	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-01	1K01011-02	1K01011-03	1K01011-04	
Client ID No:	Ambiant Air	SVM-12-7	SVM-12-15	SVM-12-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	**0.030**	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	**0.022**	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-01	1K01011-02	1K01011-03	1K01011-04	
Client ID No:	Ambiant Air	SVM-12-7	SVM-12-15	SVM-12-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	102%	102%	103%	101%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-05	1K01011-06	1K01011-07	1K01011-08	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-05	1K01011-06	1K01011-07	1K01011-08	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	**0.023**	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-05	1K01011-06	1K01011-07	1K01011-08	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	99%	101%	99%	102%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-09	1K01011-10	1K01011-11	1K01011-12	
Client ID No:	SVM-13-15	SVM-13-22	SVM-14R-8	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	**0.042**	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-09	1K01011-10	1K01011-11	1K01011-12	
Client ID No:	SVM-13-15	SVM-13-22	SVM-14R-8	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-09	1K01011-10	1K01011-11	1K01011-12	
Client ID No:	SVM-13-15	SVM-13-22	SVM-14R-8	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	99%	103%	100%	98%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-13	1K01011-14	1K01011-15	1K01011-16	
Client ID No:	SVM-14R-22	SVM-20-5	SVM-20-14.5	SVM-18-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-13	1K01011-14	1K01011-15	1K01011-16	
Client ID No:	SVM-14R-22	SVM-20-5	SVM-20-14.5	SVM-18-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/03/21	11/03/21	
AA ID No:	1K01011-13	1K01011-14	1K01011-15	1K01011-16	
Client ID No:	SVM-14R-22	SVM-20-5	SVM-20-14.5	SVM-18-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	98%	102%	98%	99%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/2021	11/01/2021	11/01/2021	11/02/2021	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/04/21	11/04/21	
AA ID No:	1K01011-17	1K01011-18	1K01011-19	1K01011-20	
Client ID No:	SVM-18-14.5	SVM-18-14.5 DUP	SVM-19-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/2021	11/01/2021	11/01/2021	11/02/2021	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/04/21	11/04/21	
AA ID No:	1K01011-17	1K01011-18	1K01011-19	1K01011-20	
Client ID No:	SVM-18-14.5	SVM-18-14.5 DUP	SVM-19-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/01/2021	11/01/2021	11/01/2021	11/02/2021	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/03/21	11/03/21	11/04/21	11/04/21	
AA ID No:	1K01011-17	1K01011-18	1K01011-19	1K01011-20	
Client ID No:	SVM-18-14.5	SVM-18-14.5 DUP	SVM-19-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	97%	95%	99%	98%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-21	1K01011-22	1K01011-23	1K01011-24	
Client ID No:	SVM-26-10	SVM-26-5	SVM-27-5	SVM-27-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	**0.0057**	**0.050**	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	**0.0045**	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-21	1K01011-22	1K01011-23	1K01011-24	
Client ID No:	SVM-26-10	SVM-26-5	SVM-27-5	SVM-27-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	**0.0039**	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-21	1K01011-22	1K01011-23	1K01011-24	
Client ID No:	SVM-26-10	SVM-26-5	SVM-27-5	SVM-27-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	101%	102%	103%	102%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-25	1K01011-26	1K01011-27	1K01011-28	
Client ID No:	SVM-24-5	SVM-24-10	SVM-25-5	SVM-25-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	**0.026**	**0.0049**	**0.016**	**0.017**	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-25	1K01011-26	1K01011-27	1K01011-28	
Client ID No:	SVM-24-5	SVM-24-10	SVM-25-5	SVM-25-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	**0.0082**	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/04/21	11/04/21	11/04/21	11/04/21	
AA ID No:	1K01011-25	1K01011-26	1K01011-27	1K01011-28	
Client ID No:	SVM-24-5	SVM-24-10	SVM-25-5	SVM-25-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	101%	101%	101%	101%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/05/21	11/05/21	11/05/21	11/05/21	
AA ID No:	1K01011-29	1K01011-30	1K01011-31	1K01011-32	
Client ID No:	SVM-21-5	SVM-21-14.5	SVM-23-5	SVM-23-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/05/21	11/05/21	11/05/21	11/05/21	
AA ID No:	1K01011-29	1K01011-30	1K01011-31	1K01011-32	
Client ID No:	SVM-21-5	SVM-21-14.5	SVM-23-5	SVM-23-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Analyzed:	11/05/21	11/05/21	11/05/21	11/05/21	
AA ID No:	1K01011-29	1K01011-30	1K01011-31	1K01011-32	
Client ID No:	SVM-21-5	SVM-21-14.5	SVM-23-5	SVM-23-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	103%	101%	101%	102%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/04/21	11/04/21	
Date Analyzed:	11/05/21	11/05/21	11/04/21	11/04/21	
AA ID No:	1K01011-33	1K01011-34	1K01011-35	1K01011-36	
Client ID No:	SVM-22-5	SVM-22-14.5	SVM-17-5	SVM-17-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	**0.0054**	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	**0.016**	**0.18 [1]**	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/04/21	11/04/21	
Date Analyzed:	11/05/21	11/05/21	11/04/21	11/04/21	
AA ID No:	1K01011-33	1K01011-34	1K01011-35	1K01011-36	
Client ID No:	SVM-22-5	SVM-22-14.5	SVM-17-5	SVM-17-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/03/21	11/03/21	11/04/21	11/04/21	
Date Analyzed:	11/05/21	11/05/21	11/04/21	11/04/21	
AA ID No:	1K01011-33	1K01011-34	1K01011-35	1K01011-36	
Client ID No:	SVM-22-5	SVM-22-14.5	SVM-17-5	SVM-17-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	101%	104%	98%	101%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-37	1K01011-38	1K01011-39	1K01011-40	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-37	1K01011-38	1K01011-39	1K01011-40	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	**0.016**	**0.010**	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-37	1K01011-38	1K01011-39	1K01011-40	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	102%	105%	102%	102%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-41	1K01011-42	1K01011-43	1K01011-44	
Client ID No:	SVM-6-7	SVM-6-13	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-41	1K01011-42	1K01011-43	1K01011-44	
Client ID No:	SVM-6-7	SVM-6-13	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	**0.044**	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-41	1K01011-42	1K01011-43	1K01011-44	
Client ID No:	SVM-6-7	SVM-6-13	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	100%	104%	102%	101%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/09/21	11/09/21	11/09/21	11/09/21	
AA ID No:	1K01011-45	1K01011-46	1K01011-47	1K01011-48	
Client ID No:	SVM-10-15	SVM-9-5	SVM-9-14.5	SVM-9-14.5 DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/09/21	11/09/21	11/09/21	11/09/21	
AA ID No:	1K01011-45	1K01011-46	1K01011-47	1K01011-48	
Client ID No:	SVM-10-15	SVM-9-5	SVM-9-14.5	SVM-9-14.5 DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	**0.055**	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/09/21	11/09/21	11/09/21	11/09/21	
AA ID No:	1K01011-45	1K01011-46	1K01011-47	1K01011-48	
Client ID No:	SVM-10-15	SVM-9-5	SVM-9-14.5	SVM-9-14.5 DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	105%	101%	102%	103%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/04/21	
Date Prepared:	11/08/21	11/08/21	11/12/21	11/12/21	
Date Analyzed:	11/09/21	11/09/21	11/13/21	11/13/21	
AA ID No:	1K01011-49	1K01011-50	1K01011-51	1K01011-52	
Client ID No:	SVM-1-5	SVM-1-15	SVM-2-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/04/21	
Date Prepared:	11/08/21	11/08/21	11/12/21	11/12/21	
Date Analyzed:	11/09/21	11/09/21	11/13/21	11/13/21	
AA ID No:	1K01011-49	1K01011-50	1K01011-51	1K01011-52	
Client ID No:	SVM-1-5	SVM-1-15	SVM-2-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	**0.016**	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/03/21	11/03/21	11/03/21	11/04/21	
Date Prepared:	11/08/21	11/08/21	11/12/21	11/12/21	
Date Analyzed:	11/09/21	11/09/21	11/13/21	11/13/21	
AA ID No:	1K01011-49	1K01011-50	1K01011-51	1K01011-52	
Client ID No:	SVM-1-5	SVM-1-15	SVM-2-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	**0.029**	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	102%	101%	102%	103%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/13/21	11/13/21	11/13/21	11/13/21	
AA ID No:	1K01011-53	1K01011-54	1K01011-55	1K01011-56	
Client ID No:	SVM-3-5	SVM-3-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	**0.0076**	**0.013**	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	**0.013**	**0.036**	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/13/21	11/13/21	11/13/21	11/13/21	
AA ID No:	1K01011-53	1K01011-54	1K01011-55	1K01011-56	
Client ID No:	SVM-3-5	SVM-3-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/13/21	11/13/21	11/13/21	11/13/21	
AA ID No:	1K01011-53	1K01011-54	1K01011-55	1K01011-56	
Client ID No:	SVM-3-5	SVM-3-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	100%	99%	100%	102%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	12/01/21	12/01/21	12/01/21	
Date Analyzed:	11/13/21	12/01/21	12/01/21	12/01/21	
AA ID No:	1K01011-57	1K01011-58	1K01011-59	1K01011-60	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-7-DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15)					
Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	12/01/21	12/01/21	12/01/21	
Date Analyzed:	11/13/21	12/01/21	12/01/21	12/01/21	
AA ID No:	1K01011-57	1K01011-58	1K01011-59	1K01011-60	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-7-DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/12/21	12/01/21	12/01/21	12/01/21	
Date Analyzed:	11/13/21	12/01/21	12/01/21	12/01/21	
AA ID No:	1K01011-57	1K01011-58	1K01011-59	1K01011-60	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-7-DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)					
Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Surrogates					**%REC Limits**
4-Bromofluorobenzene	104%	105%	103%	107%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	
Date Prepared:	12/01/21	12/01/21	
Date Analyzed:	12/01/21	12/01/21	
AA ID No:	1K01011-61	1K01011-62	
Client ID No:	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL
TO-15 (Mid Level) (TO-15)			
Acetone	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	0.020
tert-Amyl-Methyl Ether (TAME)	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	0.020
Bromodichloromethane	<0.0025	<0.0025	0.0025
Bromoform	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	0.020
tert-Butyl Alcohol (TBA)	<2.0	<2.0	2.0
Carbon Disulfide	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	0.020
Chloroform	<0.0040	<0.0040	0.0040
Chloromethane	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	
Date Prepared:	12/01/21	12/01/21	
Date Analyzed:	12/01/21	12/01/21	
AA ID No:	1K01011-61	1K01011-62	
Client ID No:	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: ug/L

Date Sampled:	11/04/21	11/04/21	
Date Prepared:	12/01/21	12/01/21	
Date Analyzed:	12/01/21	12/01/21	
AA ID No:	1K01011-61	1K01011-62	
Client ID No:	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL
TO-15 (Mid Level) (TO-15) (continued)			
Toluene	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	0.020
Surrogates			**%REC Limits**
4-Bromofluorobenzene	104%	104%	70-130

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/05/21	11/05/21	11/05/21	11/05/21	
Date Analyzed:	11/05/21	11/05/21	11/05/21	11/05/21	
AA ID No:	1K01011-01	1K01011-02	1K01011-03	1K01011-04	
Client ID No:	Ambiant Air	SVM-12-7	SVM-12-15	SVM-12-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**21**	**21**	**18**	**5.4**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	**14**	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/05/21	11/05/21	11/08/21	11/08/21	
Date Analyzed:	11/05/21	11/05/21	11/08/21	11/08/21	
AA ID No:	1K01011-05	1K01011-06	1K01011-07	1K01011-08	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**21**	**14**	**21**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-09	1K01011-10	1K01011-11	1K01011-12	
Client ID No:	SVM-13-15	SVM-13-22	SVM-14R-8	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**21**	**16**	**22**	**21**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/01/21	11/01/21	11/01/21	11/01/21	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/08/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/08/21	
AA ID No:	1K01011-13	1K01011-14	1K01011-15	1K01011-16	
Client ID No:	SVM-14R-22	SVM-20-5	SVM-20-14.5	SVM-18-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**5.4**	**22**	**23**	**21**	0.10
Carbon Dioxide	**11**	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/01/2021	11/01/2021	11/01/2021	11/02/2021	
Date Prepared:	11/08/21	11/08/21	11/08/21	11/12/21	
Date Analyzed:	11/08/21	11/08/21	11/08/21	11/12/21	
AA ID No:	1K01011-17	1K01011-18	1K01011-19	1K01011-20	
Client ID No:	SVM-18-14.5	SVM-18-14.5 DUP	SVM-19-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**22**	**22**	**21**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	**AA Project No:**	MB187341
Project No:	693142	**Date Received:**	11/01/21
Project Name:	KMEP Norwalk Biosparge Startup	**Date Reported:**	12/03/21
Method:	Fixed Gases by TCD	**Units:**	% by Volume

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/12/21	11/12/21	11/12/21	11/12/21	
AA ID No:	1K01011-21	1K01011-22	1K01011-23	1K01011-24	
Client ID No:	SVM-26-10	SVM-26-5	SVM-27-5	SVM-27-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	**0.34**	<0.20	<0.20	<0.20	0.10
Oxygen	**23**	**22**	**22**	**22**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/12/21	11/12/21	11/12/21	11/12/21	
AA ID No:	1K01011-25	1K01011-26	1K01011-27	1K01011-28	
Client ID No:	SVM-24-5	SVM-24-10	SVM-25-5	SVM-25-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**23**	**26**	**21**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/12/21	11/12/21	11/12/21	11/12/21	
AA ID No:	1K01011-29	1K01011-30	1K01011-31	1K01011-32	
Client ID No:	SVM-21-5	SVM-21-14.5	SVM-23-5	SVM-23-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.10	<0.20	**0.27**	<0.20	0.10
Oxygen	**21**	**22**	**22**	**22**	0.10
Carbon Dioxide	<0.10	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/02/21	11/02/21	11/02/21	11/02/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/12/21	
Date Analyzed:	11/12/21	11/12/21	11/12/21	11/12/21	
AA ID No:	1K01011-33	1K01011-34	1K01011-35	1K01011-36	
Client ID No:	SVM-22-5	SVM-22-14.5	SVM-17-5	SVM-17-14.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**23**	**22**	**23**	**23**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/12/21	11/12/21	11/12/21	11/15/21	
Date Analyzed:	11/12/21	11/12/21	11/12/21	11/15/21	
AA ID No:	1K01011-37	1K01011-38	1K01011-39	1K01011-40	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.10	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**20**	**19**	**21**	0.10
Carbon Dioxide	<0.10	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/15/21	11/15/21	11/15/21	11/15/21	
Date Analyzed:	11/15/21	11/15/21	11/15/21	11/15/21	
AA ID No:	1K01011-41	1K01011-42	1K01011-43	1K01011-44	
Client ID No:	SVM-6-7	SVM-6-13	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.10	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**11**	**20**	**19**	0.10
Carbon Dioxide	<0.10	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/03/21	11/03/21	11/03/21	11/03/21	
Date Prepared:	11/15/21	11/15/21	11/15/21	11/15/21	
Date Analyzed:	11/15/21	11/15/21	11/15/21	11/15/21	
AA ID No:	1K01011-45	1K01011-46	1K01011-47	1K01011-48	
Client ID No:	SVM-10-15	SVM-9-5	SVM-9-14.5	SVM-9-14.5 DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**17**	**22**	**22**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/03/21	11/03/21	11/03/21	11/04/21	
Date Prepared:	11/15/21	11/15/21	11/15/21	11/15/21	
Date Analyzed:	11/15/21	11/15/21	11/15/21	11/15/21	
AA ID No:	1K01011-49	1K01011-50	1K01011-51	1K01011-52	
Client ID No:	SVM-1-5	SVM-1-15	SVM-2-5	Ambient Air	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**21**	**18**	**20**	**22**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/15/21	11/16/21	11/16/21	11/16/21	
Date Analyzed:	11/15/21	11/16/21	11/16/21	11/16/21	
AA ID No:	1K01011-53	1K01011-54	1K01011-55	1K01011-56	
Client ID No:	SVM-3-5	SVM-3-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**21**	**22**	**23**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/04/21	11/04/21	11/04/21	11/04/21	
Date Prepared:	11/16/21	11/16/21	11/16/21	11/16/21	
Date Analyzed:	11/16/21	11/16/21	11/16/21	11/16/21	
AA ID No:	1K01011-57	1K01011-58	1K01011-59	1K01011-60	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-7-DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL
Fixed Gases (ASTM D1946M)					
Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	**22**	**23**	**22**	**22**	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21
Units: % by Volume

Date Sampled:	11/04/21	11/04/21	
Date Prepared:	11/16/21	11/16/21	
Date Analyzed:	11/16/21	11/16/21	
AA ID No:	1K01011-61	1K01011-62	
Client ID No:	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	
Dilution Factor:	2	2	MRL
Fixed Gases (ASTM D1946M)			
Methane	<0.20	<0.20	0.10
Oxygen	**22**	**13**	0.10
Carbon Dioxide	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control										
*Batch B1K0832 - *** DEFAULT PREP ****										
Blank (B1K0832-BLK1)				Prepared & Analyzed: 11/08/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0318*		*ug/L*	*0.0358*		*88.8*	*70-130*			
LCS (B1K0832-BS1)				Prepared & Analyzed: 11/08/21						
Gasoline Range Organics (GRO)	**0.703**	0.50	ug/L	0.802		87.8	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0321*		*ug/L*	*0.0358*		*89.6*	*70-130*			
LCS Dup (B1K0832-BSD1)				Prepared & Analyzed: 11/08/21						
Gasoline Range Organics (GRO)	**0.720**	0.50	ug/L	0.802		89.8	70-130	2.30	30	
Surrogate: 4-Bromofluorobenzene	*0.0333*		*ug/L*	*0.0358*		*93.0*	*70-130*			
*Batch B1K1122 - *** DEFAULT PREP ****										
Blank (B1K1122-BLK1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0320*		*ug/L*	*0.0358*		*89.4*	*70-130*			
LCS (B1K1122-BS1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	**0.654**	0.50	ug/L				70-130			
Surrogate: 4-Bromofluorobenzene	*0.0322*		*ug/L*	*0.0358*		*90.0*	*70-130*			
LCS Dup (B1K1122-BSD1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	**0.671**	0.50	ug/L				70-130	2.47	30	
Surrogate: 4-Bromofluorobenzene	*0.0329*		*ug/L*	*0.0358*		*91.8*	*70-130*			
*Batch B1K1127 - *** DEFAULT PREP ****										
Blank (B1K1127-BLK1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0344*		*ug/L*	*0.0358*		*96.2*	*70-130*			
LCS (B1K1127-BS1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	**0.761**	0.50	ug/L				70-130			
Surrogate: 4-Bromofluorobenzene	*0.0354*		*ug/L*	*0.0358*		*98.8*	*70-130*			
LCS Dup (B1K1127-BSD1)				Prepared & Analyzed: 11/03/21						
Gasoline Range Organics (GRO)	**0.793**	0.50	ug/L				70-130	4.21	30	

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control										
*Batch B1K1127 - *** DEFAULT PREP ****										
LCS Dup (B1K1127-BSD1) Continued				Prepared & Analyzed: 11/03/21						
Surrogate: 4-Bromofluorobenzene	*0.0369*		*ug/L*	*0.0358*		*103*	*70-130*			
*Batch B1K1134 - *** DEFAULT PREP ****										
Blank (B1K1134-BLK1)				Prepared & Analyzed: 11/04/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0347*		*ug/L*	*0.0358*		*97.0*	*70-130*			
LCS (B1K1134-BS1)				Prepared: 11/04/21 Analyzed: 11/05/21						
Gasoline Range Organics (GRO)	**0.777**	0.50	ug/L	0.802		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0364*		*ug/L*	*0.0358*		*102*	*70-130*			
LCS Dup (B1K1134-BSD1)				Prepared: 11/04/21 Analyzed: 11/05/21						
Gasoline Range Organics (GRO)	**0.890**	0.50	ug/L	0.802		111	70-130	13.5	30	
Surrogate: 4-Bromofluorobenzene	*0.0364*		*ug/L*	*0.0358*		*102*	*70-130*			
*Batch B1K1204 - *** DEFAULT PREP ****										
Blank (B1K1204-BLK1)				Prepared & Analyzed: 11/04/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0316*		*ug/L*	*0.0358*		*88.2*	*70-130*			
LCS (B1K1204-BS1)				Prepared & Analyzed: 11/04/21						
Gasoline Range Organics (GRO)	**0.671**	0.50	ug/L	0.802		83.7	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0321*		*ug/L*	*0.0358*		*89.6*	*70-130*			
LCS Dup (B1K1204-BSD1)				Prepared & Analyzed: 11/04/21						
Gasoline Range Organics (GRO)	**0.683**	0.50	ug/L	0.802		85.2	70-130	1.81	30	
Surrogate: 4-Bromofluorobenzene	*0.0326*		*ug/L*	*0.0358*		*91.2*	*70-130*			
*Batch B1L0307 - *** DEFAULT PREP ****										
Blank (B1L0307-BLK1)				Prepared & Analyzed: 12/01/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0319*		*ug/L*	*0.0358*		*89.0*	*70-130*			
LCS (B1L0307-BS1)				Prepared & Analyzed: 12/01/21						
Gasoline Range Organics (GRO)	**0.931**	0.50	ug/L	0.802		116	70-130			

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control										
*Batch B1L0307 - *** DEFAULT PREP ****										
LCS (B1L0307-BS1) Continued				Prepared & Analyzed: 12/01/21						
Surrogate: 4-Bromofluorobenzene	*0.0339*		*ug/L*	*0.0358*		*94.6*	*70-130*			
LCS Dup (B1L0307-BSD1)				Prepared: 12/01/21 Analyzed: 12/02/21						
Gasoline Range Organics (GRO)	**0.672**	0.50	ug/L	0.802		83.8	70-130	32.3	30	
Surrogate: 4-Bromofluorobenzene	*0.0345*		*ug/L*	*0.0358*		*96.4*	*70-130*			
*Batch B1L0315 - *** DEFAULT PREP ****										
Blank (B1L0315-BLK1)				Prepared & Analyzed: 11/12/21						
Gasoline Range Organics (GRO)	<0.50	0.50	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.0333*		*ug/L*	*0.0358*		*93.0*	*70-130*			
LCS (B1L0315-BS1)				Prepared & Analyzed: 11/12/21						
Gasoline Range Organics (GRO)	**0.662**	0.50	ug/L	0.802		82.5	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0334*		*ug/L*	*0.0358*		*93.4*	*70-130*			
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
Blank (B1K0430-BLK1)				Prepared & Analyzed: 11/03/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
Blank (B1K0430-BLK1) Continued				Prepared & Analyzed: 11/03/21						
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
Blank (B1K0430-BLK1) Continued				Prepared & Analyzed: 11/03/21						
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.143*		*ug/L*	*0.143*		*100*	*70-130*			
LCS (B1K0430-BS1)				Prepared: 11/03/21			Analyzed: 11/04/21			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
LCS (B1K0430-BS1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
Acetone	**0.0825**	0.020	ug/L	0.0950		86.8	70-130			
Benzene	**0.109**	0.0030	ug/L	0.128		85.0	70-130			
Benzyl chloride	**0.171**	0.020	ug/L	0.178		96.1	70-130			
Bromodichloromethane	**0.267**	0.0025	ug/L	0.268		99.8	70-130			
Bromoform	**0.479**	0.020	ug/L	0.413		116	70-130			
Bromomethane	**0.131**	0.020	ug/L	0.155		84.0	70-130			
2-Butanone (MEK)	**0.105**	0.020	ug/L	0.118		88.7	70-130			
Carbon Disulfide	**0.117**	0.020	ug/L	0.125		93.6	70-130			
Carbon Tetrachloride	**0.238**	0.020	ug/L	0.252		94.7	70-130			
Chlorobenzene	**0.175**	0.020	ug/L	0.184		95.1	70-130			
Chloroethane	**0.0836**	0.020	ug/L	0.106		79.2	70-130			
Chloroform	**0.182**	0.0040	ug/L	0.195		93.1	70-130			
Chloromethane	**0.0682**	0.020	ug/L	0.0826		82.6	70-130			
Dibromochloromethane	**0.387**	0.020	ug/L	0.341		113	70-130			
1,2-Dibromoethane (EDB)	**0.311**	0.020	ug/L	0.307		101	70-130			
1,2-Dichlorobenzene	**0.240**	0.020	ug/L	0.240		99.9	70-130			
1,3-Dichlorobenzene	**0.237**	0.020	ug/L	0.240		98.5	70-130			
1,4-Dichlorobenzene	**0.245**	0.020	ug/L	0.240		102	70-130			
Dichlorodifluoromethane (R12)	**0.194**	0.020	ug/L	0.198		97.9	70-130			
1,1-Dichloroethane	**0.137**	0.020	ug/L	0.162		84.6	70-130			
1,2-Dichloroethane (EDC)	**0.156**	0.0040	ug/L	0.162		96.6	70-130			
cis-1,2-Dichloroethylene	**0.145**	0.020	ug/L	0.159		91.3	70-130			
1,1-Dichloroethylene	**0.143**	0.020	ug/L	0.159		90.4	70-130			
trans-1,2-Dichloroethylene	**0.148**	0.020	ug/L	0.159		93.5	70-130			
1,2-Dichloropropane	**0.160**	0.020	ug/L	0.185		86.3	70-130			
trans-1,3-Dichloropropylene	**0.165**	0.020	ug/L	0.182		91.1	70-130			
cis-1,3-Dichloropropylene	**0.165**	0.020	ug/L	0.182		90.7	70-130			
Dichlorotetrafluoroethane	**0.247**	0.020	ug/L	0.280		88.3	70-130			
Ethylbenzene	**0.152**	0.020	ug/L	0.174		87.5	70-130			
4-Ethyltoluene	**0.187**	0.020	ug/L	0.197		95.0	70-130			
Hexachlorobutadiene	**0.394**	0.020	ug/L	0.427		92.4	70-130			
2-Hexanone (MBK)	**0.144**	0.020	ug/L	0.164		88.1	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
LCS (B1K0430-BS1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
Isopropanol (IPA)	**0.0694**	0.20	ug/L	0.0865		80.3	70-130			
Methylene Chloride	**0.104**	0.020	ug/L	0.139		74.7	70-130			
4-Methyl-2-pentanone (MIBK)	**0.137**	0.020	ug/L	0.164		83.4	70-130			
Styrene	**0.164**	0.020	ug/L	0.170		96.0	70-130			
1,1,2,2-Tetrachloroethane	**0.234**	0.020	ug/L	0.275		85.4	70-130			
Tetrachloroethylene (PCE)	**0.296**	0.010	ug/L	0.271		109	70-130			
Toluene	**0.140**	0.020	ug/L	0.151		92.7	70-130			
1,2,4-Trichlorobenzene	**0.269**	0.020	ug/L	0.297		90.6	70-130			
1,1,2-Trichloroethane	**0.215**	0.020	ug/L	0.218		98.4	70-130			
1,1,1-Trichloroethane	**0.200**	0.020	ug/L	0.218		91.4	70-130			
Trichloroethylene (TCE)	**0.216**	0.020	ug/L	0.215		100	70-130			
Trichlorofluoromethane (R11)	**0.203**	0.020	ug/L	0.225		90.4	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.310**	0.020	ug/L	0.307		101	70-130			
1,3,5-Trimethylbenzene	**0.178**	0.020	ug/L	0.197		90.4	70-130			
1,2,4-Trimethylbenzene	**0.182**	0.020	ug/L	0.197		92.5	70-130			
Vinyl acetate	**0.101**	0.020	ug/L	0.118		85.5	70-130			
Vinyl chloride	**0.0827**	0.020	ug/L	0.102		80.9	70-130			
o-Xylene	**0.148**	0.020	ug/L	0.174		85.0	70-130			
m,p-Xylenes	**0.259**	0.020	ug/L	0.347		74.7	70-130			
1,2,3-Trichloropropane	**0.217**	0.020	ug/L	0.241		90.1	70-130			
sec-Butylbenzene	**0.216**	0.020	ug/L	0.220		98.2	70-130			
Isopropylbenzene	**0.190**	0.020	ug/L	0.197		96.4	70-130			
n-Propylbenzene	**0.185**	0.020	ug/L	0.197		93.8	70-130			
4-Isopropyltoluene	**0.222**	0.020	ug/L	0.220		101	70-130			
Surrogate: 4-Bromofluorobenzene	*0.138*		*ug/L*	*0.143*		*96.5*	*70-130*			
LCS Dup (B1K0430-BSD1)				Prepared: 11/03/21 Analyzed: 11/04/21						
Acetone	**0.0833**	0.020	ug/L	0.0950		87.6	70-130	0.917	30	
Benzene	**0.108**	0.0030	ug/L	0.128		84.8	70-130	0.206	30	
Benzyl chloride	**0.171**	0.020	ug/L	0.178		96.1	70-130	0.0303	30	
Bromodichloromethane	**0.273**	0.0025	ug/L	0.268		102	70-130	2.18	30	

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
LCS Dup (B1K0430-BSD1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
Bromoform	**0.472**	0.020	ug/L	0.413		114	70-130	1.46	30	
Bromomethane	**0.130**	0.020	ug/L	0.155		83.8	70-130	0.298	30	
2-Butanone (MEK)	**0.105**	0.020	ug/L	0.118		89.1	70-130	0.450	30	
Carbon Disulfide	**0.117**	0.020	ug/L	0.125		93.6	70-130	0.0534	30	
Carbon Tetrachloride	**0.242**	0.020	ug/L	0.252		96.1	70-130	1.52	30	
Chlorobenzene	**0.177**	0.020	ug/L	0.184		96.3	70-130	1.25	30	
Chloroethane	**0.0871**	0.020	ug/L	0.106		82.5	70-130	4.17	30	
Chloroform	**0.182**	0.0040	ug/L	0.195		93.0	70-130	0.134	30	
Chloromethane	**0.0679**	0.020	ug/L	0.0826		82.2	70-130	0.485	30	
Dibromochloromethane	**0.390**	0.020	ug/L	0.341		114	70-130	0.790	30	
1,2-Dibromoethane (EDB)	**0.316**	0.020	ug/L	0.307		103	70-130	1.42	30	
1,2-Dichlorobenzene	**0.237**	0.020	ug/L	0.240		98.7	70-130	1.28	30	
1,3-Dichlorobenzene	**0.235**	0.020	ug/L	0.240		97.9	70-130	0.611	30	
1,4-Dichlorobenzene	**0.243**	0.020	ug/L	0.240		101	70-130	0.839	30	
Dichlorodifluoromethane (R12)	**0.193**	0.020	ug/L	0.198		97.5	70-130	0.435	30	
1,1-Dichloroethane	**0.137**	0.020	ug/L	0.162		84.5	70-130	0.148	30	
1,2-Dichloroethane (EDC)	**0.155**	0.0040	ug/L	0.162		95.6	70-130	0.989	30	
cis-1,2-Dichloroethylene	**0.143**	0.020	ug/L	0.159		90.2	70-130	1.24	30	
1,1-Dichloroethylene	**0.145**	0.020	ug/L	0.159		91.1	70-130	0.854	30	
trans-1,2-Dichloroethylene	**0.147**	0.020	ug/L	0.159		92.5	70-130	1.02	30	
1,2-Dichloropropane	**0.163**	0.020	ug/L	0.185		88.1	70-130	2.04	30	
trans-1,3-Dichloropropylene	**0.166**	0.020	ug/L	0.182		91.6	70-130	0.574	30	
cis-1,3-Dichloropropylene	**0.167**	0.020	ug/L	0.182		91.8	70-130	1.23	30	
Dichlorotetrafluoroethane	**0.247**	0.020	ug/L	0.280		88.2	70-130	0.113	30	
Ethylbenzene	**0.153**	0.020	ug/L	0.174		87.9	70-130	0.399	30	
4-Ethyltoluene	**0.187**	0.020	ug/L	0.197		95.0	70-130	0.0263	30	
Hexachlorobutadiene	**0.398**	0.020	ug/L	0.427		93.3	70-130	0.969	30	
2-Hexanone (MBK)	**0.148**	0.020	ug/L	0.164		90.2	70-130	2.30	30	
Isopropanol (IPA)	**0.0700**	0.20	ug/L	0.0865		80.9	70-130	0.846	30	
Methylene Chloride	**0.104**	0.020	ug/L	0.139		74.6	70-130	0.134	30	
4-Methyl-2-pentanone (MIBK)	**0.140**	0.020	ug/L	0.164		85.2	70-130	2.11	30	
Styrene	**0.165**	0.020	ug/L	0.170		97.0	70-130	1.01	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0430 - *** DEFAULT PREP ****										
LCS Dup (B1K0430-BSD1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
1,1,2,2-Tetrachloroethane	**0.233**	0.020	ug/L	0.275		85.0	70-130	0.499	30	
Tetrachloroethylene (PCE)	**0.297**	0.010	ug/L	0.271		110	70-130	0.572	30	
Toluene	**0.140**	0.020	ug/L	0.151		93.0	70-130	0.296	30	
1,2,4-Trichlorobenzene	**0.271**	0.020	ug/L	0.297		91.2	70-130	0.577	30	
1,1,2-Trichloroethane	**0.217**	0.020	ug/L	0.218		99.3	70-130	0.860	30	
1,1,1-Trichloroethane	**0.200**	0.020	ug/L	0.218		91.4	70-130	0.00	30	
Trichloroethylene (TCE)	**0.217**	0.020	ug/L	0.215		101	70-130	0.397	30	
Trichlorofluoromethane (R11)	**0.202**	0.020	ug/L	0.225		89.9	70-130	0.527	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.304**	0.020	ug/L	0.307		99.0	70-130	2.20	30	
1,3,5-Trimethylbenzene	**0.177**	0.020	ug/L	0.197		90.1	70-130	0.249	30	
1,2,4-Trimethylbenzene	**0.181**	0.020	ug/L	0.197		92.2	70-130	0.379	30	
Vinyl acetate	**0.102**	0.020	ug/L	0.118		86.0	70-130	0.555	30	
Vinyl chloride	**0.0833**	0.020	ug/L	0.102		81.4	70-130	0.647	30	
o-Xylene	**0.147**	0.020	ug/L	0.174		84.6	70-130	0.413	30	
m,p-Xylenes	**0.263**	0.020	ug/L	0.347		75.6	70-130	1.20	30	
1,2,3-Trichloropropane	**0.218**	0.020	ug/L	0.241		90.3	70-130	0.139	30	
sec-Butylbenzene	**0.216**	0.020	ug/L	0.220		98.1	70-130	0.102	30	
Isopropylbenzene	**0.191**	0.020	ug/L	0.197		96.9	70-130	0.517	30	
n-Propylbenzene	**0.186**	0.020	ug/L	0.197		94.6	70-130	0.796	30	
4-Isopropyltoluene	**0.221**	0.020	ug/L	0.220		101	70-130	0.173	30	
Surrogate: 4-Bromofluorobenzene	*0.139*		*ug/L*	*0.143*		*96.9*	*70-130*			
*Batch B1K0509 - *** DEFAULT PREP ****										
Blank (B1K0509-BLK1)				Prepared & Analyzed: 11/03/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
Blank (B1K0509-BLK1) Continued				Prepared & Analyzed: 11/03/21						
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
Blank (B1K0509-BLK1) Continued				Prepared & Analyzed: 11/03/21						
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
Blank (B1K0509-BLK1) Continued				Prepared & Analyzed: 11/03/21						
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.120*		*ug/L*	*0.143*		*84.1*	*70-130*			
LCS (B1K0509-BS1)				Prepared: 11/03/21 Analyzed: 11/04/21						
Acetone	**0.0894**	0.020	ug/L	0.0950		94.1	70-130			
Benzene	**0.105**	0.0030	ug/L	0.128		82.1	70-130			
Benzyl chloride	**0.211**	0.020	ug/L	0.178		119	70-130			
Bromodichloromethane	**0.322**	0.0025	ug/L	0.268		120	70-130			
Bromoform	**0.540**	0.020	ug/L	0.413		130	70-130			
Bromomethane	**0.225**	0.020	ug/L	0.155		145	70-130			
2-Butanone (MEK)	**0.111**	0.020	ug/L	0.118		93.9	70-130			
Carbon Disulfide	**0.115**	0.020	ug/L	0.125		92.0	70-130			
Carbon Tetrachloride	**0.323**	0.020	ug/L	0.252		128	70-130			
Chlorobenzene	**0.187**	0.020	ug/L	0.184		101	70-130			
Chloroethane	**0.136**	0.020	ug/L	0.106		128	70-130			
Chloroform	**0.198**	0.0040	ug/L	0.195		101	70-130			
Chloromethane	**0.0854**	0.020	ug/L	0.0826		103	70-130			
Dibromochloromethane	**0.382**	0.020	ug/L	0.341		112	70-130			
1,2-Dibromoethane (EDB)	**0.294**	0.020	ug/L	0.307		95.7	70-130			
1,2-Dichlorobenzene	**0.208**	0.020	ug/L	0.240		86.6	70-130			
1,3-Dichlorobenzene	**0.210**	0.020	ug/L	0.240		87.2	70-130			
1,4-Dichlorobenzene	**0.201**	0.020	ug/L	0.240		83.6	70-130			
Dichlorodifluoromethane (R12)	**0.201**	0.020	ug/L	0.198		102	70-130			
1,1-Dichloroethane	**0.147**	0.020	ug/L	0.162		91.0	70-130			
1,2-Dichloroethane (EDC)	**0.167**	0.0040	ug/L	0.162		103	70-130			
cis-1,2-Dichloroethylene	**0.149**	0.020	ug/L	0.159		94.1	70-130			
1,1-Dichloroethylene	**0.154**	0.020	ug/L	0.159		96.8	70-130			
trans-1,2-Dichloroethylene	**0.148**	0.020	ug/L	0.159		93.3	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
LCS (B1K0509-BS1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
1,2-Dichloropropane	**0.200**	0.020	ug/L	0.185		108	70-130			
trans-1,3-Dichloropropylene	**0.191**	0.020	ug/L	0.182		105	70-130			
cis-1,3-Dichloropropylene	**0.189**	0.020	ug/L	0.182		104	70-130			
Dichlorotetrafluoroethane	**0.302**	0.020	ug/L	0.280		108	70-130			
Ethylbenzene	**0.189**	0.020	ug/L	0.174		109	70-130			
4-Ethyltoluene	**0.211**	0.020	ug/L	0.197		107	70-130			
Hexachlorobutadiene	**0.330**	0.020	ug/L	0.427		77.4	70-130			
2-Hexanone (MBK)	**0.187**	0.020	ug/L	0.164		114	70-130			
Isopropanol (IPA)	**0.0768**	0.20	ug/L	0.0865		88.8	70-130			
Methylene Chloride	**0.102**	0.020	ug/L	0.139		73.4	70-130			
4-Methyl-2-pentanone (MIBK)	**0.171**	0.020	ug/L	0.164		105	70-130			
Styrene	**0.163**	0.020	ug/L	0.170		95.5	70-130			
1,1,2,2-Tetrachloroethane	**0.286**	0.020	ug/L	0.275		104	70-130			
Tetrachloroethylene (PCE)	**0.238**	0.010	ug/L	0.271		87.7	70-130			
Toluene	**0.139**	0.020	ug/L	0.151		91.9	70-130			
1,2,4-Trichlorobenzene	**0.210**	0.020	ug/L	0.297		70.6	70-130			
1,1,2-Trichloroethane	**0.216**	0.020	ug/L	0.218		98.8	70-130			
1,1,1-Trichloroethane	**0.227**	0.020	ug/L	0.218		104	70-130			
Trichloroethylene (TCE)	**0.223**	0.020	ug/L	0.215		104	70-130			
Trichlorofluoromethane (R11)	**0.255**	0.020	ug/L	0.225		113	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.310**	0.020	ug/L	0.307		101	70-130			
1,3,5-Trimethylbenzene	**0.200**	0.020	ug/L	0.197		102	70-130			
1,2,4-Trimethylbenzene	**0.205**	0.020	ug/L	0.197		104	70-130			
Vinyl acetate	**0.104**	0.020	ug/L	0.118		88.3	70-130			
Vinyl chloride	**0.116**	0.020	ug/L	0.102		114	70-130			
o-Xylene	**0.182**	0.020	ug/L	0.174		105	70-130			
m,p-Xylenes	**0.377**	0.020	ug/L	0.347		109	70-130			
1,2,3-Trichloropropane	**0.274**	0.020	ug/L	0.241		114	70-130			
sec-Butylbenzene	**0.250**	0.020	ug/L	0.220		114	70-130			
Isopropylbenzene	**0.225**	0.020	ug/L	0.197		114	70-130			
n-Propylbenzene	**0.230**	0.020	ug/L	0.197		117	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
LCS (B1K0509-BS1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
4-Isopropyltoluene	**0.254**	0.020	ug/L	0.220		116	70-130			
Surrogate: 4-Bromofluorobenzene	*0.145*		*ug/L*	*0.143*		*102*	*70-130*			
LCS Dup (B1K0509-BSD1)				Prepared: 11/03/21 Analyzed: 11/04/21						
Acetone	**0.0910**	0.020	ug/L	0.0950		95.7	70-130	1.74	30	
Benzene	**0.104**	0.0030	ug/L	0.128		81.3	70-130	0.979	30	
Benzyl chloride	**0.214**	0.020	ug/L	0.178		120	70-130	1.27	30	
Bromodichloromethane	**0.323**	0.0025	ug/L	0.268		121	70-130	0.436	30	
Bromoform	**0.523**	0.020	ug/L	0.413		126	70-130	3.19	30	
Bromomethane	**0.227**	0.020	ug/L	0.155		146	70-130	0.910	30	
2-Butanone (MEK)	**0.111**	0.020	ug/L	0.118		94.1	70-130	0.239	30	
Carbon Disulfide	**0.115**	0.020	ug/L	0.125		92.1	70-130	0.0814	30	
Carbon Tetrachloride	**0.318**	0.020	ug/L	0.252		126	70-130	1.57	30	
Chlorobenzene	**0.186**	0.020	ug/L	0.184		101	70-130	0.272	30	
Chloroethane	**0.135**	0.020	ug/L	0.106		128	70-130	0.645	30	
Chloroform	**0.195**	0.0040	ug/L	0.195		99.7	70-130	1.57	30	
Chloromethane	**0.0864**	0.020	ug/L	0.0826		105	70-130	1.18	30	
Dibromochloromethane	**0.383**	0.020	ug/L	0.341		112	70-130	0.267	30	
1,2-Dibromoethane (EDB)	**0.295**	0.020	ug/L	0.307		96.0	70-130	0.287	30	
1,2-Dichlorobenzene	**0.211**	0.020	ug/L	0.240		87.9	70-130	1.52	30	
1,3-Dichlorobenzene	**0.212**	0.020	ug/L	0.240		88.3	70-130	1.17	30	
1,4-Dichlorobenzene	**0.202**	0.020	ug/L	0.240		84.1	70-130	0.596	30	
Dichlorodifluoromethane (R12)	**0.203**	0.020	ug/L	0.198		102	70-130	0.808	30	
1,1-Dichloroethane	**0.138**	0.020	ug/L	0.162		85.0	70-130	6.79	30	
1,2-Dichloroethane (EDC)	**0.165**	0.0040	ug/L	0.162		102	70-130	0.804	30	
cis-1,2-Dichloroethylene	**0.149**	0.020	ug/L	0.159		93.7	70-130	0.399	30	
1,1-Dichloroethylene	**0.157**	0.020	ug/L	0.159		98.7	70-130	1.92	30	
trans-1,2-Dichloroethylene	**0.151**	0.020	ug/L	0.159		95.1	70-130	1.89	30	
1,2-Dichloropropane	**0.199**	0.020	ug/L	0.185		108	70-130	0.671	30	
trans-1,3-Dichloropropylene	**0.193**	0.020	ug/L	0.182		107	70-130	1.28	30	
cis-1,3-Dichloropropylene	**0.188**	0.020	ug/L	0.182		104	70-130	0.385	30	
Dichlorotetrafluoroethane	**0.304**	0.020	ug/L	0.280		109	70-130	0.392	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0509 - *** DEFAULT PREP ****										
LCS Dup (B1K0509-BSD1) Continued				Prepared: 11/03/21 Analyzed: 11/04/21						
Ethylbenzene	**0.187**	0.020	ug/L	0.174		108	70-130	0.716	30	
4-Ethyltoluene	**0.213**	0.020	ug/L	0.197		108	70-130	0.789	30	
Hexachlorobutadiene	**0.334**	0.020	ug/L	0.427		78.3	70-130	1.03	30	
2-Hexanone (MBK)	**0.186**	0.020	ug/L	0.164		113	70-130	0.769	30	
Isopropanol (IPA)	**0.0847**	0.20	ug/L	0.0865		97.8	70-130	9.71	30	
Methylene Chloride	**0.103**	0.020	ug/L	0.139		74.0	70-130	0.882	30	
4-Methyl-2-pentanone (MIBK)	**0.170**	0.020	ug/L	0.164		104	70-130	0.696	30	
Styrene	**0.162**	0.020	ug/L	0.170		95.4	70-130	0.157	30	
1,1,2,2-Tetrachloroethane	**0.284**	0.020	ug/L	0.275		104	70-130	0.578	30	
Tetrachloroethylene (PCE)	**0.238**	0.010	ug/L	0.271		87.8	70-130	0.0570	30	
Toluene	**0.138**	0.020	ug/L	0.151		91.8	70-130	0.163	30	
1,2,4-Trichlorobenzene	**0.208**	0.020	ug/L	0.297		70.2	70-130	0.604	30	
1,1,2-Trichloroethane	**0.215**	0.020	ug/L	0.218		98.5	70-130	0.355	30	
1,1,1-Trichloroethane	**0.226**	0.020	ug/L	0.218		103	70-130	0.674	30	
Trichloroethylene (TCE)	**0.220**	0.020	ug/L	0.215		103	70-130	1.07	30	
Trichlorofluoromethane (R11)	**0.259**	0.020	ug/L	0.225		115	70-130	1.66	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.307**	0.020	ug/L	0.307		100	70-130	0.945	30	
1,3,5-Trimethylbenzene	**0.210**	0.020	ug/L	0.197		107	70-130	5.09	30	
1,2,4-Trimethylbenzene	**0.206**	0.020	ug/L	0.197		105	70-130	0.406	30	
Vinyl acetate	**0.105**	0.020	ug/L	0.118		89.0	70-130	0.806	30	
Vinyl chloride	**0.118**	0.020	ug/L	0.102		116	70-130	1.59	30	
o-Xylene	**0.181**	0.020	ug/L	0.174		104	70-130	0.406	30	
m,p-Xylenes	**0.378**	0.020	ug/L	0.347		109	70-130	0.196	30	
1,2,3-Trichloropropane	**0.280**	0.020	ug/L	0.241		116	70-130	2.05	30	
sec-Butylbenzene	**0.253**	0.020	ug/L	0.220		115	70-130	1.03	30	
Isopropylbenzene	**0.224**	0.020	ug/L	0.197		114	70-130	0.416	30	
n-Propylbenzene	**0.230**	0.020	ug/L	0.197		117	70-130	0.0856	30	
4-Isopropyltoluene	**0.255**	0.020	ug/L	0.220		116	70-130	0.345	30	
Surrogate: 4-Bromofluorobenzene	*0.145*		*ug/L*	*0.143*		*101*	*70-130*			
*Batch B1K0510 - *** DEFAULT PREP ****										

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
Blank (B1K0510-BLK1)				Prepared & Analyzed: 11/04/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
Blank (B1K0510-BLK1) Continued				Prepared & Analyzed: 11/04/21						
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
Blank (B1K0510-BLK1) Continued				Prepared & Analyzed: 11/04/21						
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.143*		*ug/L*	*0.143*		*99.7*	*70-130*			
LCS (B1K0510-BS1)				Prepared: 11/04/21 Analyzed: 11/05/21						
Acetone	**0.0870**	0.020	ug/L	0.0950		91.6	70-130			
Benzene	**0.119**	0.0030	ug/L	0.128		93.0	70-130			
Benzyl chloride	**0.168**	0.020	ug/L	0.178		94.2	70-130			
Bromodichloromethane	**0.299**	0.0025	ug/L	0.268		112	70-130			
Bromoform	**0.474**	0.020	ug/L	0.413		115	70-130			
Bromomethane	**0.146**	0.020	ug/L	0.155		93.9	70-130			
2-Butanone (MEK)	**0.106**	0.020	ug/L	0.118		89.8	70-130			
Carbon Disulfide	**0.128**	0.020	ug/L	0.125		103	70-130			
Carbon Tetrachloride	**0.286**	0.020	ug/L	0.252		114	70-130			
Chlorobenzene	**0.197**	0.020	ug/L	0.184		107	70-130			
Chloroethane	**0.0940**	0.020	ug/L	0.106		89.0	70-130			
Chloroform	**0.201**	0.0040	ug/L	0.195		103	70-130			
Chloromethane	**0.0738**	0.020	ug/L	0.0826		89.4	70-130			
Dibromochloromethane	**0.440**	0.020	ug/L	0.341		129	70-130			
1,2-Dibromoethane (EDB)	**0.383**	0.020	ug/L	0.307		125	70-130			
1,2-Dichlorobenzene	**0.282**	0.020	ug/L	0.240		117	70-130			
1,3-Dichlorobenzene	**0.280**	0.020	ug/L	0.240		116	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
LCS (B1K0510-BS1) Continued				Prepared: 11/04/21 Analyzed: 11/05/21						
1,4-Dichlorobenzene	**0.276**	0.020	ug/L	0.240		115	70-130			
Dichlorodifluoromethane (R12)	**0.218**	0.020	ug/L	0.198		110	70-130			
1,1-Dichloroethane	**0.150**	0.020	ug/L	0.162		92.9	70-130			
1,2-Dichloroethane (EDC)	**0.172**	0.0040	ug/L	0.162		106	70-130			
cis-1,2-Dichloroethylene	**0.157**	0.020	ug/L	0.159		99.2	70-130			
1,1-Dichloroethylene	**0.156**	0.020	ug/L	0.159		98.2	70-130			
trans-1,2-Dichloroethylene	**0.161**	0.020	ug/L	0.159		101	70-130			
1,2-Dichloropropane	**0.187**	0.020	ug/L	0.185		101	70-130			
trans-1,3-Dichloropropylene	**0.205**	0.020	ug/L	0.182		113	70-130			
cis-1,3-Dichloropropylene	**0.201**	0.020	ug/L	0.182		111	70-130			
Dichlorotetrafluoroethane	**0.274**	0.020	ug/L	0.280		98.1	70-130			
Ethylbenzene	**0.166**	0.020	ug/L	0.174		95.8	70-130			
4-Ethyltoluene	**0.188**	0.020	ug/L	0.197		95.4	70-130			
Hexachlorobutadiene	**0.514**	0.020	ug/L	0.427		121	70-130			
2-Hexanone (MBK)	**0.165**	0.020	ug/L	0.164		101	70-130			
Isopropanol (IPA)	**0.0497**	0.20	ug/L	0.0865		57.4	70-130			QL-02
Methylene Chloride	**0.113**	0.020	ug/L	0.139		81.0	70-130			
4-Methyl-2-pentanone (MIBK)	**0.158**	0.020	ug/L	0.164		96.7	70-130			
Styrene	**0.185**	0.020	ug/L	0.170		108	70-130			
1,1,2,2-Tetrachloroethane	**0.263**	0.020	ug/L	0.275		95.6	70-130			
Tetrachloroethylene (PCE)	**0.344**	0.010	ug/L	0.271		127	70-130			
Toluene	**0.168**	0.020	ug/L	0.151		111	70-130			
1,2,4-Trichlorobenzene	**0.343**	0.020	ug/L	0.297		116	70-130			
1,1,2-Trichloroethane	**0.263**	0.020	ug/L	0.218		120	70-130			
1,1,1-Trichloroethane	**0.218**	0.020	ug/L	0.218		99.8	70-130			
Trichloroethylene (TCE)	**0.254**	0.020	ug/L	0.215		118	70-130			
Trichlorofluoromethane (R11)	**0.228**	0.020	ug/L	0.225		102	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.343**	0.020	ug/L	0.307		112	70-130			
1,3,5-Trimethylbenzene	**0.205**	0.020	ug/L	0.197		104	70-130			
1,2,4-Trimethylbenzene	**0.205**	0.020	ug/L	0.197		104	70-130			
Vinyl acetate	**0.110**	0.020	ug/L	0.118		93.2	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
LCS (B1K0510-BS1) Continued				Prepared: 11/04/21 Analyzed: 11/05/21						
Vinyl chloride	**0.0926**	0.020	ug/L	0.102		90.6	70-130			
o-Xylene	**0.164**	0.020	ug/L	0.174		94.2	70-130			
m,p-Xylenes	**0.290**	0.020	ug/L	0.347		83.5	70-130			
1,2,3-Trichloropropane	**0.224**	0.020	ug/L	0.241		92.8	70-130			
sec-Butylbenzene	**0.211**	0.020	ug/L	0.220		96.3	70-130			
Isopropylbenzene	**0.199**	0.020	ug/L	0.197		101	70-130			
n-Propylbenzene	**0.186**	0.020	ug/L	0.197		94.6	70-130			
4-Isopropyltoluene	**0.212**	0.020	ug/L	0.220		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	*0.141*		*ug/L*	*0.143*		*98.3*	*70-130*			
LCS Dup (B1K0510-BSD1)				Prepared: 11/04/21 Analyzed: 11/05/21						
Acetone	**0.0850**	0.020	ug/L	0.0950		89.5	70-130	2.32	30	
Benzene	**0.115**	0.0030	ug/L	0.128		90.3	70-130	2.95	30	
Benzyl chloride	**0.169**	0.020	ug/L	0.178		94.9	70-130	0.677	30	
Bromodichloromethane	**0.289**	0.0025	ug/L	0.268		108	70-130	3.47	30	
Bromoform	**0.482**	0.020	ug/L	0.413		117	70-130	1.77	30	
Bromomethane	**0.141**	0.020	ug/L	0.155		90.7	70-130	3.49	30	
2-Butanone (MEK)	**0.108**	0.020	ug/L	0.118		91.7	70-130	2.15	30	
Carbon Disulfide	**0.123**	0.020	ug/L	0.125		99.0	70-130	3.77	30	
Carbon Tetrachloride	**0.278**	0.020	ug/L	0.252		110	70-130	2.97	30	
Chlorobenzene	**0.198**	0.020	ug/L	0.184		107	70-130	0.0932	30	
Chloroethane	**0.0912**	0.020	ug/L	0.106		86.4	70-130	2.96	30	
Chloroform	**0.196**	0.0040	ug/L	0.195		100	70-130	2.43	30	
Chloromethane	**0.0720**	0.020	ug/L	0.0826		87.2	70-130	2.55	30	
Dibromochloromethane	**0.414**	0.020	ug/L	0.341		122	70-130	6.14	30	
1,2-Dibromoethane (EDB)	**0.359**	0.020	ug/L	0.307		117	70-130	6.36	30	
1,2-Dichlorobenzene	**0.282**	0.020	ug/L	0.240		117	70-130	0.213	30	
1,3-Dichlorobenzene	**0.278**	0.020	ug/L	0.240		116	70-130	0.625	30	
1,4-Dichlorobenzene	**0.278**	0.020	ug/L	0.240		115	70-130	0.543	30	
Dichlorodifluoromethane (R12)	**0.212**	0.020	ug/L	0.198		107	70-130	2.76	30	
1,1-Dichloroethane	**0.146**	0.020	ug/L	0.162		90.0	70-130	3.14	30	
1,2-Dichloroethane (EDC)	**0.169**	0.0040	ug/L	0.162		104	70-130	1.87	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
LCS Dup (B1K0510-BSD1) Continued				Prepared: 11/04/21 Analyzed: 11/05/21						
cis-1,2-Dichloroethylene	**0.152**	0.020	ug/L	0.159		95.7	70-130	3.62	30	
1,1-Dichloroethylene	**0.153**	0.020	ug/L	0.159		96.6	70-130	1.64	30	
trans-1,2-Dichloroethylene	**0.155**	0.020	ug/L	0.159		98.0	70-130	3.41	30	
1,2-Dichloropropane	**0.184**	0.020	ug/L	0.185		99.6	70-130	1.37	30	
trans-1,3-Dichloropropylene	**0.192**	0.020	ug/L	0.182		106	70-130	6.48	30	
cis-1,3-Dichloropropylene	**0.191**	0.020	ug/L	0.182		105	70-130	5.24	30	
Dichlorotetrafluoroethane	**0.261**	0.020	ug/L	0.280		93.3	70-130	4.96	30	
Ethylbenzene	**0.168**	0.020	ug/L	0.174		96.8	70-130	1.12	30	
4-Ethyltoluene	**0.190**	0.020	ug/L	0.197		96.5	70-130	1.15	30	
Hexachlorobutadiene	**0.513**	0.020	ug/L	0.427		120	70-130	0.332	30	
2-Hexanone (MBK)	**0.156**	0.020	ug/L	0.164		95.2	70-130	5.61	30	
Isopropanol (IPA)	**0.0737**	0.20	ug/L	0.0865		85.2	70-130	39.0	30	
Methylene Chloride	**0.107**	0.020	ug/L	0.139		77.3	70-130	4.61	30	
4-Methyl-2-pentanone (MIBK)	**0.149**	0.020	ug/L	0.164		91.0	70-130	6.10	30	
Styrene	**0.186**	0.020	ug/L	0.170		109	70-130	0.827	30	
1,1,2,2-Tetrachloroethane	**0.264**	0.020	ug/L	0.275		96.0	70-130	0.391	30	
Tetrachloroethylene (PCE)	**0.342**	0.010	ug/L	0.271		126	70-130	0.514	30	
Toluene	**0.157**	0.020	ug/L	0.151		104	70-130	6.65	30	
1,2,4-Trichlorobenzene	**0.345**	0.020	ug/L	0.297		116	70-130	0.517	30	
1,1,2-Trichloroethane	**0.245**	0.020	ug/L	0.218		112	70-130	6.94	30	
1,1,1-Trichloroethane	**0.214**	0.020	ug/L	0.218		98.1	70-130	1.74	30	
Trichloroethylene (TCE)	**0.247**	0.020	ug/L	0.215		115	70-130	2.94	30	
Trichlorofluoromethane (R11)	**0.217**	0.020	ug/L	0.225		96.6	70-130	5.12	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.336**	0.020	ug/L	0.307		109	70-130	2.28	30	
1,3,5-Trimethylbenzene	**0.203**	0.020	ug/L	0.197		103	70-130	0.989	30	
1,2,4-Trimethylbenzene	**0.208**	0.020	ug/L	0.197		106	70-130	1.24	30	
Vinyl acetate	**0.108**	0.020	ug/L	0.118		91.2	70-130	2.19	30	
Vinyl chloride	**0.0896**	0.020	ug/L	0.102		87.7	70-130	3.25	30	
o-Xylene	**0.163**	0.020	ug/L	0.174		94.0	70-130	0.186	30	
m,p-Xylenes	**0.292**	0.020	ug/L	0.347		83.9	70-130	0.478	30	
1,2,3-Trichloropropane	**0.224**	0.020	ug/L	0.241		92.9	70-130	0.0538	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0510 - *** DEFAULT PREP ****										
LCS Dup (B1K0510-BSD1) Continued				Prepared: 11/04/21 Analyzed: 11/05/21						
sec-Butylbenzene	**0.211**	0.020	ug/L	0.220		96.0	70-130	0.260	30	
Isopropylbenzene	**0.199**	0.020	ug/L	0.197		101	70-130	0.0741	30	
n-Propylbenzene	**0.187**	0.020	ug/L	0.197		95.3	70-130	0.763	30	
4-Isopropyltoluene	**0.216**	0.020	ug/L	0.220		98.3	70-130	1.67	30	
Surrogate: 4-Bromofluorobenzene	*0.144*		*ug/L*	*0.143*		*100*	*70-130*			
*Batch B1K0511 - *** DEFAULT PREP ****										
Blank (B1K0511-BLK1)				Prepared & Analyzed: 11/04/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
Blank (B1K0511-BLK1) Continued				Prepared & Analyzed: 11/04/21						
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
Blank (B1K0511-BLK1) Continued				Prepared & Analyzed: 11/04/21						
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.121*		*ug/L*	*0.143*		*84.2*	*70-130*			
LCS (B1K0511-BS1)				Prepared & Analyzed: 11/04/21						
Acetone	**0.0934**	0.020	ug/L	0.0950		98.3	70-130			
Benzene	**0.104**	0.0030	ug/L	0.128		81.1	70-130			
Benzyl chloride	**0.189**	0.020	ug/L	0.178		106	70-130			
Bromodichloromethane	**0.313**	0.0025	ug/L	0.268		117	70-130			
Bromoform	**0.487**	0.020	ug/L	0.413		118	70-130			
Bromomethane	**0.225**	0.020	ug/L	0.155		145	70-130			QL-04
2-Butanone (MEK)	**0.116**	0.020	ug/L	0.118		98.3	70-130			
Carbon Disulfide	**0.120**	0.020	ug/L	0.125		96.6	70-130			
Carbon Tetrachloride	**0.312**	0.020	ug/L	0.252		124	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
LCS (B1K0511-BS1) Continued				Prepared & Analyzed: 11/04/21						
Chlorobenzene	**0.182**	0.020	ug/L	0.184		98.8	70-130			
Chloroethane	**0.129**	0.020	ug/L	0.106		122	70-130			
Chloroform	**0.195**	0.0040	ug/L	0.195		99.7	70-130			
Chloromethane	**0.0863**	0.020	ug/L	0.0826		104	70-130			
Dibromochloromethane	**0.354**	0.020	ug/L	0.341		104	70-130			
1,2-Dibromoethane (EDB)	**0.287**	0.020	ug/L	0.307		93.3	70-130			
1,2-Dichlorobenzene	**0.244**	0.020	ug/L	0.240		101	70-130			
1,3-Dichlorobenzene	**0.234**	0.020	ug/L	0.240		97.3	70-130			
1,4-Dichlorobenzene	**0.226**	0.020	ug/L	0.240		94.1	70-130			
Dichlorodifluoromethane (R12)	**0.208**	0.020	ug/L	0.198		105	70-130			
1,1-Dichloroethane	**0.147**	0.020	ug/L	0.162		90.7	70-130			
1,2-Dichloroethane (EDC)	**0.167**	0.0040	ug/L	0.162		103	70-130			
cis-1,2-Dichloroethylene	**0.149**	0.020	ug/L	0.159		93.7	70-130			
1,1-Dichloroethylene	**0.161**	0.020	ug/L	0.159		102	70-130			
trans-1,2-Dichloroethylene	**0.153**	0.020	ug/L	0.159		96.5	70-130			
1,2-Dichloropropane	**0.186**	0.020	ug/L	0.185		101	70-130			
trans-1,3-Dichloropropylene	**0.192**	0.020	ug/L	0.182		106	70-130			
cis-1,3-Dichloropropylene	**0.181**	0.020	ug/L	0.182		99.8	70-130			
Dichlorotetrafluoroethane	**0.317**	0.020	ug/L	0.280		113	70-130			
Ethylbenzene	**0.183**	0.020	ug/L	0.174		105	70-130			
4-Ethyltoluene	**0.183**	0.020	ug/L	0.197		92.9	70-130			
Hexachlorobutadiene	**0.483**	0.020	ug/L	0.427		113	70-130			
2-Hexanone (MBK)	**0.184**	0.020	ug/L	0.164		112	70-130			
Isopropanol (IPA)	**0.0720**	0.20	ug/L	0.0865		83.2	70-130			
Methylene Chloride	**0.102**	0.020	ug/L	0.139		73.5	70-130			
4-Methyl-2-pentanone (MIBK)	**0.169**	0.020	ug/L	0.164		103	70-130			
Styrene	**0.167**	0.020	ug/L	0.170		97.9	70-130			
1,1,2,2-Tetrachloroethane	**0.298**	0.020	ug/L	0.275		109	70-130			
Tetrachloroethylene (PCE)	**0.229**	0.010	ug/L	0.271		84.6	70-130			
Toluene	**0.129**	0.020	ug/L	0.151		85.6	70-130			
1,2,4-Trichlorobenzene	**0.331**	0.020	ug/L	0.297		112	70-130			
1,1,2-Trichloroethane	**0.205**	0.020	ug/L	0.218		93.8	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
LCS (B1K0511-BS1) Continued				Prepared & Analyzed: 11/04/21						
1,1,1-Trichloroethane	**0.228**	0.020	ug/L	0.218		104	70-130			
Trichloroethylene (TCE)	**0.204**	0.020	ug/L	0.215		95.0	70-130			
Trichlorofluoromethane (R11)	**0.265**	0.020	ug/L	0.225		118	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.313**	0.020	ug/L	0.307		102	70-130			
1,3,5-Trimethylbenzene	**0.220**	0.020	ug/L	0.197		112	70-130			
1,2,4-Trimethylbenzene	**0.213**	0.020	ug/L	0.197		108	70-130			
Vinyl acetate	**0.110**	0.020	ug/L	0.118		93.1	70-130			
Vinyl chloride	**0.120**	0.020	ug/L	0.102		117	70-130			
o-Xylene	**0.181**	0.020	ug/L	0.174		104	70-130			
m,p-Xylenes	**0.372**	0.020	ug/L	0.347		107	70-130			
1,2,3-Trichloropropane	**0.306**	0.020	ug/L	0.241		127	70-130			
sec-Butylbenzene	**0.274**	0.020	ug/L	0.220		125	70-130			
Isopropylbenzene	**0.254**	0.020	ug/L	0.197		129	70-130			
n-Propylbenzene	**0.253**	0.020	ug/L	0.197		129	70-130			
4-Isopropyltoluene	**0.279**	0.020	ug/L	0.220		127	70-130			
Surrogate: 4-Bromofluorobenzene	*0.147*		*ug/L*	*0.143*		*102*	*70-130*			
LCS Dup (B1K0511-BSD1)				Prepared & Analyzed: 11/04/21						
Acetone	**0.0949**	0.020	ug/L	0.0950		99.8	70-130	1.59	30	
Benzene	**0.107**	0.0030	ug/L	0.128		84.1	70-130	3.57	30	
Benzyl chloride	**0.199**	0.020	ug/L	0.178		112	70-130	5.23	30	
Bromodichloromethane	**0.334**	0.0025	ug/L	0.268		125	70-130	6.42	30	
Bromoform	**0.524**	0.020	ug/L	0.413		127	70-130	7.30	30	
Bromomethane	**0.243**	0.020	ug/L	0.155		156	70-130	7.67	30	QL-04
2-Butanone (MEK)	**0.117**	0.020	ug/L	0.118		98.9	70-130	0.659	30	
Carbon Disulfide	**0.122**	0.020	ug/L	0.125		98.0	70-130	1.39	30	
Carbon Tetrachloride	**0.327**	0.020	ug/L	0.252		130	70-130	4.69	30	
Chlorobenzene	**0.194**	0.020	ug/L	0.184		105	70-130	6.35	30	
Chloroethane	**0.132**	0.020	ug/L	0.106		125	70-130	2.39	30	
Chloroform	**0.200**	0.0040	ug/L	0.195		103	70-130	2.82	30	
Chloromethane	**0.0866**	0.020	ug/L	0.0826		105	70-130	0.382	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
LCS Dup (B1K0511-BSD1) Continued				Prepared & Analyzed: 11/04/21						
Dibromochloromethane	**0.376**	0.020	ug/L	0.341		110	70-130	5.89	30	
1,2-Dibromoethane (EDB)	**0.307**	0.020	ug/L	0.307		100	70-130	6.91	30	
1,2-Dichlorobenzene	**0.259**	0.020	ug/L	0.240		108	70-130	5.86	30	
1,3-Dichlorobenzene	**0.231**	0.020	ug/L	0.240		96.0	70-130	1.27	30	
1,4-Dichlorobenzene	**0.240**	0.020	ug/L	0.240		100	70-130	6.05	30	
Dichlorodifluoromethane (R12)	**0.210**	0.020	ug/L	0.198		106	70-130	1.04	30	
1,1-Dichloroethane	**0.150**	0.020	ug/L	0.162		92.5	70-130	1.97	30	
1,2-Dichloroethane (EDC)	**0.172**	0.0040	ug/L	0.162		106	70-130	2.82	30	
cis-1,2-Dichloroethylene	**0.154**	0.020	ug/L	0.159		97.0	70-130	3.46	30	
1,1-Dichloroethylene	**0.163**	0.020	ug/L	0.159		103	70-130	1.20	30	
trans-1,2-Dichloroethylene	**0.160**	0.020	ug/L	0.159		101	70-130	4.11	30	
1,2-Dichloropropane	**0.201**	0.020	ug/L	0.185		109	70-130	7.50	30	
trans-1,3-Dichloropropylene	**0.203**	0.020	ug/L	0.182		112	70-130	5.49	30	
cis-1,3-Dichloropropylene	**0.193**	0.020	ug/L	0.182		106	70-130	6.45	30	
Dichlorotetrafluoroethane	**0.319**	0.020	ug/L	0.280		114	70-130	0.637	30	
Ethylbenzene	**0.195**	0.020	ug/L	0.174		112	70-130	6.42	30	
4-Ethyltoluene	**0.198**	0.020	ug/L	0.197		101	70-130	8.23	30	
Hexachlorobutadiene	**0.485**	0.020	ug/L	0.427		114	70-130	0.573	30	
2-Hexanone (MBK)	**0.187**	0.020	ug/L	0.164		114	70-130	1.48	30	
Isopropanol (IPA)	**0.0825**	0.20	ug/L	0.0865		95.4	70-130	13.6	30	
Methylene Chloride	**0.107**	0.020	ug/L	0.139		76.7	70-130	4.29	30	
4-Methyl-2-pentanone (MIBK)	**0.173**	0.020	ug/L	0.164		106	70-130	2.18	30	
Styrene	**0.175**	0.020	ug/L	0.170		103	70-130	4.81	30	
1,1,2,2-Tetrachloroethane	**0.312**	0.020	ug/L	0.275		114	70-130	4.65	30	
Tetrachloroethylene (PCE)	**0.247**	0.010	ug/L	0.271		91.1	70-130	7.43	30	
Toluene	**0.139**	0.020	ug/L	0.151		92.2	70-130	7.45	30	
1,2,4-Trichlorobenzene	**0.323**	0.020	ug/L	0.297		109	70-130	2.40	30	
1,1,2-Trichloroethane	**0.218**	0.020	ug/L	0.218		99.9	70-130	6.33	30	
1,1,1-Trichloroethane	**0.235**	0.020	ug/L	0.218		108	70-130	3.11	30	
Trichloroethylene (TCE)	**0.222**	0.020	ug/L	0.215		103	70-130	8.23	30	
Trichlorofluoromethane (R11)	**0.268**	0.020	ug/L	0.225		119	70-130	1.08	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
LCS Dup (B1K0511-BSD1) Continued				Prepared & Analyzed: 11/04/21						
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.317**	0.020	ug/L	0.307		103	70-130	1.39	30	
1,3,5-Trimethylbenzene	**0.233**	0.020	ug/L	0.197		119	70-130	6.12	30	
1,2,4-Trimethylbenzene	**0.229**	0.020	ug/L	0.197		116	70-130	7.30	30	
Vinyl acetate	**0.113**	0.020	ug/L	0.118		95.8	70-130	2.84	30	
Vinyl chloride	**0.123**	0.020	ug/L	0.102		120	70-130	2.48	30	
o-Xylene	**0.190**	0.020	ug/L	0.174		109	70-130	5.06	30	
m,p-Xylenes	**0.398**	0.020	ug/L	0.347		115	70-130	6.91	30	
1,2,3-Trichloropropane	**0.364**	0.020	ug/L	0.241		151	70-130	17.1	30	QL-03
sec-Butylbenzene	**0.283**	0.020	ug/L	0.220		129	70-130	3.14	30	
Isopropylbenzene	**0.245**	0.020	ug/L	0.197		124	70-130	3.57	30	
n-Propylbenzene	**0.253**	0.020	ug/L	0.197		129	70-130	0.0972	30	
4-Isopropyltoluene	**0.290**	0.020	ug/L	0.220		132	70-130	4.09	30	QL-03
Surrogate: 4-Bromofluorobenzene	*0.144*		*ug/L*	*0.143*		*101*	*70-130*			
Duplicate (B1K0511-DUP1)				**Source: 1K03021-04** Prepared & Analyzed: 11/04/21						
Acetone	**<0.020**	0.020	ug/L						30	
Allyl chloride	**<0.020**	0.020	ug/L						30	
tert-Amyl-Methyl Ether (TAME)	**<0.020**	0.020	ug/L						30	
Benzene	**<0.0030**	0.0030	ug/L						30	
Benzyl chloride	**<0.020**	0.020	ug/L						30	
Bromodichloromethane	**<0.0025**	0.0025	ug/L						30	
Bromoform	**<0.020**	0.020	ug/L						30	
Bromomethane	**<0.020**	0.020	ug/L						30	
1,3-Butadiene	**<0.020**	0.020	ug/L						30	
2-Butanone (MEK)	**<0.020**	0.020	ug/L						30	
tert-Butyl Alcohol (TBA)	**<2.0**	2.0	ug/L						30	
Carbon Disulfide	**<0.020**	0.020	ug/L						30	
Carbon Tetrachloride	**<0.020**	0.020	ug/L						30	
Chlorobenzene	**<0.020**	0.020	ug/L						30	
Chloroethane	**<0.020**	0.020	ug/L						30	
Chloroform	**<0.0040**	0.0040	ug/L						30	

Allen Aminian
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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
Duplicate (B1K0511-DUP1) Continued	**Source: 1K03021-04**	Prepared & Analyzed: 11/04/21								
Chloromethane	**<0.020**	0.020	ug/L						30	
Cyclohexane	**<0.020**	0.020	ug/L						30	
Dibromochloromethane	**<0.020**	0.020	ug/L						30	
1,2-Dibromoethane (EDB)	**<0.020**	0.020	ug/L						30	
1,2-Dichlorobenzene	**<0.020**	0.020	ug/L						30	
1,3-Dichlorobenzene	**<0.020**	0.020	ug/L						30	
1,4-Dichlorobenzene	**<0.020**	0.020	ug/L						30	
Dichlorodifluoromethane (R12)	**<0.020**	0.020	ug/L						30	
1,1-Dichloroethane	**<0.020**	0.020	ug/L						30	
1,2-Dichloroethane (EDC)	**<0.0040**	0.0040	ug/L						30	
cis-1,2-Dichloroethylene	**<0.020**	0.020	ug/L						30	
1,1-Dichloroethylene	**<0.020**	0.020	ug/L						30	
trans-1,2-Dichloroethylene	**<0.020**	0.020	ug/L						30	
1,2-Dichloropropane	**<0.020**	0.020	ug/L						30	
trans-1,3-Dichloropropylene	**<0.020**	0.020	ug/L						30	
cis-1,3-Dichloropropylene	**<0.020**	0.020	ug/L						30	
Dichlorotetrafluoroethane	**<0.020**	0.020	ug/L						30	
Diisopropyl ether (DIPE)	**<0.020**	0.020	ug/L						30	
1,4-Dioxane	**<0.020**	0.020	ug/L						30	
Ethanol	**0.280**	0.020	ug/L		0.244			14.0	30	
Ethyl Acetate	**<0.020**	0.020	ug/L						30	
Ethylbenzene	**<0.020**	0.020	ug/L						30	
Ethyl-tert-Butyl Ether (ETBE)	**<0.020**	0.020	ug/L						30	
4-Ethyltoluene	**<0.020**	0.020	ug/L						30	
Heptane	**<0.020**	0.020	ug/L						30	
Hexachlorobutadiene	**<0.020**	0.020	ug/L						30	
n-Hexane	**<0.020**	0.020	ug/L						30	
2-Hexanone (MBK)	**<0.020**	0.020	ug/L						30	
Isopropanol (IPA)	**<0.20**	0.20	ug/L						30	
Methyl-tert-Butyl Ether (MTBE)	**<0.020**	0.020	ug/L						30	
Methylene Chloride	**<0.020**	0.020	ug/L						30	
4-Methyl-2-pentanone (MIBK)	**<0.020**	0.020	ug/L						30	

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0511 - *** DEFAULT PREP ****										
Duplicate (B1K0511-DUP1) Continued		**Source: 1K03021-04**	Prepared & Analyzed: 11/04/21							
Naphthalene	**<0.0030**	0.0030	ug/L						30	
Propylene	**<0.020**	0.020	ug/L						30	
Styrene	**<0.020**	0.020	ug/L						30	
1,1,2,2-Tetrachloroethane	**<0.020**	0.020	ug/L						30	
Tetrachloroethylene (PCE)	**<0.010**	0.010	ug/L						30	
Tetrahydrofuran (THF)	**<0.020**	0.020	ug/L						30	
Toluene	**<0.020**	0.020	ug/L						30	
1,2,4-Trichlorobenzene	**<0.020**	0.020	ug/L						30	
1,1,2-Trichloroethane	**<0.020**	0.020	ug/L						30	
1,1,1-Trichloroethane	**<0.020**	0.020	ug/L						30	
Trichloroethylene (TCE)	**<0.020**	0.020	ug/L						30	
Trichlorofluoromethane (R11)	**<0.020**	0.020	ug/L						30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**<0.020**	0.020	ug/L						30	
1,3,5-Trimethylbenzene	**<0.020**	0.020	ug/L						30	
1,2,4-Trimethylbenzene	**<0.020**	0.020	ug/L						30	
2,2,4-Trimethylpentane	**<0.020**	0.020	ug/L						30	
Vinyl acetate	**<0.020**	0.020	ug/L						30	
Vinyl bromide	**<0.020**	0.020	ug/L						30	
Vinyl chloride	**<0.020**	0.020	ug/L						30	
o-Xylene	**<0.020**	0.020	ug/L						30	
m,p-Xylenes	**<0.020**	0.020	ug/L						30	
1,2,3-Trichloropropane	**<0.020**	0.020	ug/L						30	
sec-Butylbenzene	**<0.020**	0.020	ug/L						30	
Isopropylbenzene	**<0.020**	0.020	ug/L						30	
n-Propylbenzene	**<0.020**	0.020	ug/L						30	
4-Isopropyltoluene	**<0.020**	0.020	ug/L						30	
n-Butylbenzene	**<0.020**	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.148*		*ug/L*	*0.143*		*104*	*70-130*			
*Batch B1K0831 - *** DEFAULT PREP ****										
Blank (B1K0831-BLK1)			Prepared & Analyzed: 11/08/21							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
Blank (B1K0831-BLK1) Continued				Prepared & Analyzed: 11/08/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
Blank (B1K0831-BLK1) Continued				Prepared & Analyzed: 11/08/21						
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
Blank (B1K0831-BLK1) Continued				Prepared & Analyzed: 11/08/21						
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.144*		*ug/L*	*0.143*		*100*	*70-130*			
LCS (B1K0831-BS1)				Prepared: 11/08/21 Analyzed: 11/09/21						
Acetone	**0.0902**	0.020	ug/L	0.0950		94.9	70-130			
Benzene	**0.122**	0.0030	ug/L	0.128		95.4	70-130			
Benzyl chloride	**0.174**	0.020	ug/L	0.178		97.6	70-130			
Bromodichloromethane	**0.317**	0.0025	ug/L	0.268		118	70-130			
Bromoform	**0.506**	0.020	ug/L	0.413		122	70-130			
Bromomethane	**0.149**	0.020	ug/L	0.155		95.8	70-130			
2-Butanone (MEK)	**0.114**	0.020	ug/L	0.118		96.6	70-130			
Carbon Disulfide	**0.129**	0.020	ug/L	0.125		104	70-130			
Carbon Tetrachloride	**0.298**	0.020	ug/L	0.252		119	70-130			
Chlorobenzene	**0.208**	0.020	ug/L	0.184		113	70-130			
Chloroethane	**0.0963**	0.020	ug/L	0.106		91.2	70-130			
Chloroform	**0.208**	0.0040	ug/L	0.195		106	70-130			
Chloromethane	**0.0787**	0.020	ug/L	0.0826		95.2	70-130			
Dibromochloromethane	**0.442**	0.020	ug/L	0.341		130	70-130			
1,2-Dibromoethane (EDB)	**0.390**	0.020	ug/L	0.307		127	70-130			
1,2-Dichlorobenzene	**0.293**	0.020	ug/L	0.240		122	70-130			
1,3-Dichlorobenzene	**0.288**	0.020	ug/L	0.240		120	70-130			

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LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
LCS (B1K0831-BS1) Continued				Prepared: 11/08/21 Analyzed: 11/09/21						
1,4-Dichlorobenzene	**0.287**	0.020	ug/L	0.240		120	70-130			
Dichlorodifluoromethane (R12)	**0.208**	0.020	ug/L	0.198		105	70-130			
1,1-Dichloroethane	**0.151**	0.020	ug/L	0.162		93.4	70-130			
1,2-Dichloroethane (EDC)	**0.176**	0.0040	ug/L	0.162		109	70-130			
cis-1,2-Dichloroethylene	**0.159**	0.020	ug/L	0.159		100	70-130			
1,1-Dichloroethylene	**0.162**	0.020	ug/L	0.159		102	70-130			
trans-1,2-Dichloroethylene	**0.162**	0.020	ug/L	0.159		102	70-130			
1,2-Dichloropropane	**0.194**	0.020	ug/L	0.185		105	70-130			
trans-1,3-Dichloropropylene	**0.207**	0.020	ug/L	0.182		114	70-130			
cis-1,3-Dichloropropylene	**0.203**	0.020	ug/L	0.182		112	70-130			
Dichlorotetrafluoroethane	**0.279**	0.020	ug/L	0.280		99.8	70-130			
Ethylbenzene	**0.178**	0.020	ug/L	0.174		102	70-130			
4-Ethyltoluene	**0.199**	0.020	ug/L	0.197		101	70-130			
Hexachlorobutadiene	**0.523**	0.020	ug/L	0.427		123	70-130			
2-Hexanone (MBK)	**0.168**	0.020	ug/L	0.164		103	70-130			
Isopropanol (IPA)	**0.0751**	0.20	ug/L	0.0865		86.8	70-130			
Methylene Chloride	**0.113**	0.020	ug/L	0.139		81.5	70-130			
4-Methyl-2-pentanone (MIBK)	**0.162**	0.020	ug/L	0.164		98.6	70-130			
Styrene	**0.194**	0.020	ug/L	0.170		114	70-130			
1,1,2,2-Tetrachloroethane	**0.274**	0.020	ug/L	0.275		99.8	70-130			
Tetrachloroethylene (PCE)	**0.346**	0.010	ug/L	0.271		127	70-130			
Toluene	**0.169**	0.020	ug/L	0.151		112	70-130			
1,2,4-Trichlorobenzene	**0.360**	0.020	ug/L	0.297		121	70-130			
1,1,2-Trichloroethane	**0.262**	0.020	ug/L	0.218		120	70-130			
1,1,1-Trichloroethane	**0.227**	0.020	ug/L	0.218		104	70-130			
Trichloroethylene (TCE)	**0.265**	0.020	ug/L	0.215		123	70-130			
Trichlorofluoromethane (R11)	**0.233**	0.020	ug/L	0.225		104	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.354**	0.020	ug/L	0.307		115	70-130			
1,3,5-Trimethylbenzene	**0.211**	0.020	ug/L	0.197		107	70-130			
1,2,4-Trimethylbenzene	**0.215**	0.020	ug/L	0.197		109	70-130			
Vinyl acetate	**0.114**	0.020	ug/L	0.118		96.0	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
LCS (B1K0831-BS1) Continued				Prepared: 11/08/21 Analyzed: 11/09/21						
Vinyl chloride	**0.0909**	0.020	ug/L	0.102		88.9	70-130			
o-Xylene	**0.173**	0.020	ug/L	0.174		99.5	70-130			
m,p-Xylenes	**0.299**	0.020	ug/L	0.347		86.1	70-130			
1,2,3-Trichloropropane	**0.237**	0.020	ug/L	0.241		98.2	70-130			
sec-Butylbenzene	**0.219**	0.020	ug/L	0.220		99.6	70-130			
Isopropylbenzene	**0.209**	0.020	ug/L	0.197		107	70-130			
n-Propylbenzene	**0.196**	0.020	ug/L	0.197		99.9	70-130			
4-Isopropyltoluene	**0.224**	0.020	ug/L	0.220		102	70-130			
Surrogate: 4-Bromofluorobenzene	*0.143*		*ug/L*	*0.143*		*99.6*	*70-130*			
LCS Dup (B1K0831-BSD1)				Prepared: 11/08/21 Analyzed: 11/09/21						
Acetone	**0.0897**	0.020	ug/L	0.0950		94.4	70-130	0.528	30	
Benzene	**0.124**	0.0030	ug/L	0.128		96.6	70-130	1.33	30	
Benzyl chloride	**0.175**	0.020	ug/L	0.178		98.1	70-130	0.505	30	
Bromodichloromethane	**0.317**	0.0025	ug/L	0.268		118	70-130	0.0423	30	
Bromoform	**0.500**	0.020	ug/L	0.413		121	70-130	1.17	30	
Bromomethane	**0.152**	0.020	ug/L	0.155		98.0	70-130	2.27	30	
2-Butanone (MEK)	**0.116**	0.020	ug/L	0.118		98.2	70-130	1.57	30	
Carbon Disulfide	**0.129**	0.020	ug/L	0.125		103	70-130	0.434	30	
Carbon Tetrachloride	**0.290**	0.020	ug/L	0.252		115	70-130	2.69	30	
Chlorobenzene	**0.208**	0.020	ug/L	0.184		113	70-130	0.199	30	
Chloroethane	**0.0964**	0.020	ug/L	0.106		91.3	70-130	0.0548	30	
Chloroform	**0.206**	0.0040	ug/L	0.195		105	70-130	0.945	30	
Chloromethane	**0.0759**	0.020	ug/L	0.0826		91.9	70-130	3.55	30	
Dibromochloromethane	**0.442**	0.020	ug/L	0.341		130	70-130	0.116	30	
1,2-Dibromoethane (EDB)	**0.382**	0.020	ug/L	0.307		124	70-130	2.03	30	
1,2-Dichlorobenzene	**0.292**	0.020	ug/L	0.240		122	70-130	0.370	30	
1,3-Dichlorobenzene	**0.291**	0.020	ug/L	0.240		121	70-130	0.872	30	
1,4-Dichlorobenzene	**0.291**	0.020	ug/L	0.240		121	70-130	1.19	30	
Dichlorodifluoromethane (R12)	**0.208**	0.020	ug/L	0.198		105	70-130	0.286	30	
1,1-Dichloroethane	**0.154**	0.020	ug/L	0.162		95.0	70-130	1.75	30	
1,2-Dichloroethane (EDC)	**0.177**	0.0040	ug/L	0.162		109	70-130	0.0229	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
LCS Dup (B1K0831-BSD1) Continued				Prepared: 11/08/21 Analyzed: 11/09/21						
cis-1,2-Dichloroethylene	**0.162**	0.020	ug/L	0.159		102	70-130	1.75	30	
1,1-Dichloroethylene	**0.162**	0.020	ug/L	0.159		102	70-130	0.122	30	
trans-1,2-Dichloroethylene	**0.162**	0.020	ug/L	0.159		102	70-130	0.147	30	
1,2-Dichloropropane	**0.193**	0.020	ug/L	0.185		105	70-130	0.0717	30	
trans-1,3-Dichloropropylene	**0.205**	0.020	ug/L	0.182		113	70-130	0.661	30	
cis-1,3-Dichloropropylene	**0.200**	0.020	ug/L	0.182		110	70-130	1.49	30	
Dichlorotetrafluoroethane	**0.280**	0.020	ug/L	0.280		100	70-130	0.225	30	
Ethylbenzene	**0.177**	0.020	ug/L	0.174		102	70-130	0.343	30	
4-Ethyltoluene	**0.196**	0.020	ug/L	0.197		99.5	70-130	1.69	30	
Hexachlorobutadiene	**0.530**	0.020	ug/L	0.427		124	70-130	1.28	30	
2-Hexanone (MBK)	**0.169**	0.020	ug/L	0.164		103	70-130	0.267	30	
Isopropanol (IPA)	**0.0742**	0.20	ug/L	0.0865		85.8	70-130	1.12	30	
Methylene Chloride	**0.113**	0.020	ug/L	0.139		81.7	70-130	0.245	30	
4-Methyl-2-pentanone (MIBK)	**0.161**	0.020	ug/L	0.164		98.0	70-130	0.610	30	
Styrene	**0.194**	0.020	ug/L	0.170		114	70-130	0.132	30	
1,1,2,2-Tetrachloroethane	**0.272**	0.020	ug/L	0.275		99.1	70-130	0.729	30	
Tetrachloroethylene (PCE)	**0.348**	0.010	ug/L	0.271		128	70-130	0.567	30	
Toluene	**0.167**	0.020	ug/L	0.151		111	70-130	1.25	30	
1,2,4-Trichlorobenzene	**0.367**	0.020	ug/L	0.297		124	70-130	1.92	30	
1,1,2-Trichloroethane	**0.257**	0.020	ug/L	0.218		118	70-130	1.96	30	
1,1,1-Trichloroethane	**0.226**	0.020	ug/L	0.218		104	70-130	0.650	30	
Trichloroethylene (TCE)	**0.257**	0.020	ug/L	0.215		120	70-130	2.94	30	
Trichlorofluoromethane (R11)	**0.235**	0.020	ug/L	0.225		104	70-130	0.504	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.348**	0.020	ug/L	0.307		114	70-130	1.51	30	
1,3,5-Trimethylbenzene	**0.213**	0.020	ug/L	0.197		108	70-130	0.742	30	
1,2,4-Trimethylbenzene	**0.216**	0.020	ug/L	0.197		110	70-130	0.616	30	
Vinyl acetate	**0.115**	0.020	ug/L	0.118		96.8	70-130	0.803	30	
Vinyl chloride	**0.0916**	0.020	ug/L	0.102		89.6	70-130	0.756	30	
o-Xylene	**0.174**	0.020	ug/L	0.174		100	70-130	0.476	30	
m,p-Xylenes	**0.308**	0.020	ug/L	0.347		88.8	70-130	3.06	30	
1,2,3-Trichloropropane	**0.240**	0.020	ug/L	0.241		99.6	70-130	1.44	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K0831 - *** DEFAULT PREP ****										
LCS Dup (B1K0831-BSD1) Continued				Prepared: 11/08/21 Analyzed: 11/09/21						
sec-Butylbenzene	**0.221**	0.020	ug/L	0.220		101	70-130	0.949	30	
Isopropylbenzene	**0.207**	0.020	ug/L	0.197		105	70-130	1.16	30	
n-Propylbenzene	**0.198**	0.020	ug/L	0.197		100	70-130	0.549	30	
4-Isopropyltoluene	**0.225**	0.020	ug/L	0.220		102	70-130	0.122	30	
Surrogate: 4-Bromofluorobenzene	*0.143*		*ug/L*	*0.143*		*100*	*70-130*			
*Batch B1K1626 - *** DEFAULT PREP ****										
Blank (B1K1626-BLK1)				Prepared & Analyzed: 11/12/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
Blank (B1K1626-BLK1) Continued				Prepared & Analyzed: 11/12/21						
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
Blank (B1K1626-BLK1) Continued				Prepared & Analyzed: 11/12/21						
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.148*		*ug/L*	*0.143*		*104*	*70-130*			
LCS (B1K1626-BS1)				Prepared: 11/12/21			Analyzed: 11/13/21			
Acetone	**0.0920**	0.020	ug/L	0.0950		96.8	70-130			
Benzene	**0.121**	0.0030	ug/L	0.128		95.0	70-130			
Benzyl chloride	**0.164**	0.020	ug/L	0.178		92.2	70-130			
Bromodichloromethane	**0.308**	0.0025	ug/L	0.268		115	70-130			
Bromoform	**0.489**	0.020	ug/L	0.413		118	70-130			
Bromomethane	**0.147**	0.020	ug/L	0.155		94.4	70-130			
2-Butanone (MEK)	**0.112**	0.020	ug/L	0.118		95.1	70-130			
Carbon Disulfide	**0.130**	0.020	ug/L	0.125		104	70-130			
Carbon Tetrachloride	**0.290**	0.020	ug/L	0.252		115	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
LCS (B1K1626-BS1) Continued				Prepared: 11/12/21 Analyzed: 11/13/21						
Chlorobenzene	**0.207**	0.020	ug/L	0.184		112	70-130			
Chloroethane	**0.0909**	0.020	ug/L	0.106		86.1	70-130			
Chloroform	**0.205**	0.0040	ug/L	0.195		105	70-130			
Chloromethane	**0.0774**	0.020	ug/L	0.0826		93.7	70-130			
Dibromochloromethane	**0.426**	0.020	ug/L	0.341		125	70-130			
1,2-Dibromoethane (EDB)	**0.368**	0.020	ug/L	0.307		120	70-130			
1,2-Dichlorobenzene	**0.276**	0.020	ug/L	0.240		115	70-130			
1,3-Dichlorobenzene	**0.276**	0.020	ug/L	0.240		115	70-130			
1,4-Dichlorobenzene	**0.276**	0.020	ug/L	0.240		115	70-130			
Dichlorodifluoromethane (R12)	**0.192**	0.020	ug/L	0.198		97.2	70-130			
1,1-Dichloroethane	**0.153**	0.020	ug/L	0.162		94.7	70-130			
1,2-Dichloroethane (EDC)	**0.177**	0.0040	ug/L	0.162		109	70-130			
cis-1,2-Dichloroethylene	**0.159**	0.020	ug/L	0.159		100	70-130			
1,1-Dichloroethylene	**0.160**	0.020	ug/L	0.159		101	70-130			
trans-1,2-Dichloroethylene	**0.169**	0.020	ug/L	0.159		106	70-130			
1,2-Dichloropropane	**0.182**	0.020	ug/L	0.185		98.4	70-130			
trans-1,3-Dichloropropylene	**0.193**	0.020	ug/L	0.182		106	70-130			
cis-1,3-Dichloropropylene	**0.192**	0.020	ug/L	0.182		106	70-130			
Dichlorotetrafluoroethane	**0.279**	0.020	ug/L	0.280		99.8	70-130			
Ethylbenzene	**0.176**	0.020	ug/L	0.174		102	70-130			
4-Ethyltoluene	**0.189**	0.020	ug/L	0.197		96.2	70-130			
Hexachlorobutadiene	**0.516**	0.020	ug/L	0.427		121	70-130			
2-Hexanone (MBK)	**0.157**	0.020	ug/L	0.164		96.1	70-130			
Isopropanol (IPA)	**0.0741**	0.20	ug/L	0.0865		85.7	70-130			
Methylene Chloride	**0.113**	0.020	ug/L	0.139		81.2	70-130			
4-Methyl-2-pentanone (MIBK)	**0.153**	0.020	ug/L	0.164		93.7	70-130			
Styrene	**0.186**	0.020	ug/L	0.170		109	70-130			
1,1,2,2-Tetrachloroethane	**0.273**	0.020	ug/L	0.275		99.3	70-130			
Tetrachloroethylene (PCE)	**0.339**	0.010	ug/L	0.271		125	70-130			
Toluene	**0.163**	0.020	ug/L	0.151		108	70-130			
1,2,4-Trichlorobenzene	**0.348**	0.020	ug/L	0.297		117	70-130			
1,1,2-Trichloroethane	**0.250**	0.020	ug/L	0.218		115	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
LCS (B1K1626-BS1) Continued				Prepared: 11/12/21 Analyzed: 11/13/21						
1,1,1-Trichloroethane	**0.228**	0.020	ug/L	0.218		104	70-130			
Trichloroethylene (TCE)	**0.253**	0.020	ug/L	0.215		118	70-130			
Trichlorofluoromethane (R11)	**0.234**	0.020	ug/L	0.225		104	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.360**	0.020	ug/L	0.307		118	70-130			
1,3,5-Trimethylbenzene	**0.205**	0.020	ug/L	0.197		104	70-130			
1,2,4-Trimethylbenzene	**0.207**	0.020	ug/L	0.197		105	70-130			
Vinyl acetate	**0.117**	0.020	ug/L	0.118		98.8	70-130			
Vinyl chloride	**0.0911**	0.020	ug/L	0.102		89.0	70-130			
o-Xylene	**0.173**	0.020	ug/L	0.174		99.6	70-130			
m,p-Xylenes	**0.286**	0.020	ug/L	0.347		82.3	70-130			
1,2,3-Trichloropropane	**0.308**	0.020	ug/L	0.241		128	70-130			
sec-Butylbenzene	**0.226**	0.020	ug/L	0.220		103	70-130			
Isopropylbenzene	**0.250**	0.020	ug/L	0.197		127	70-130			
n-Propylbenzene	**0.226**	0.020	ug/L	0.197		115	70-130			
4-Isopropyltoluene	**0.266**	0.020	ug/L	0.220		121	70-130			
Surrogate: 4-Bromofluorobenzene	*0.142*		*ug/L*	*0.143*		*99.3*	*70-130*			
LCS Dup (B1K1626-BSD1)				Prepared: 11/12/21 Analyzed: 11/13/21						
Acetone	**0.0972**	0.020	ug/L	0.0950		102	70-130	5.52	30	
Benzene	**0.114**	0.0030	ug/L	0.128		89.3	70-130	6.16	30	
Benzyl chloride	**0.161**	0.020	ug/L	0.178		90.3	70-130	2.10	30	
Bromodichloromethane	**0.326**	0.0025	ug/L	0.268		121	70-130	5.67	30	
Bromoform	**0.488**	0.020	ug/L	0.413		118	70-130	0.127	30	
Bromomethane	**0.151**	0.020	ug/L	0.155		97.0	70-130	2.77	30	
2-Butanone (MEK)	**0.109**	0.020	ug/L	0.118		92.1	70-130	3.23	30	
Carbon Disulfide	**0.122**	0.020	ug/L	0.125		98.0	70-130	6.21	30	
Carbon Tetrachloride	**0.297**	0.020	ug/L	0.252		118	70-130	2.27	30	
Chlorobenzene	**0.202**	0.020	ug/L	0.184		110	70-130	2.16	30	
Chloroethane	**0.0951**	0.020	ug/L	0.106		90.1	70-130	4.57	30	
Chloroform	**0.201**	0.0040	ug/L	0.195		103	70-130	1.86	30	
Chloromethane	**0.0761**	0.020	ug/L	0.0826		92.2	70-130	1.64	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
LCS Dup (B1K1626-BSD1) Continued				Prepared: 11/12/21 Analyzed: 11/13/21						
Dibromochloromethane	**0.481**	0.020	ug/L	0.341		141	70-130	12.3	30	
1,2-Dibromoethane (EDB)	**0.396**	0.020	ug/L	0.307		129	70-130	7.39	30	
1,2-Dichlorobenzene	**0.278**	0.020	ug/L	0.240		116	70-130	0.694	30	
1,3-Dichlorobenzene	**0.277**	0.020	ug/L	0.240		115	70-130	0.370	30	
1,4-Dichlorobenzene	**0.277**	0.020	ug/L	0.240		115	70-130	0.0870	30	
Dichlorodifluoromethane (R12)	**0.203**	0.020	ug/L	0.198		102	70-130	5.31	30	
1,1-Dichloroethane	**0.148**	0.020	ug/L	0.162		91.6	70-130	3.36	30	
1,2-Dichloroethane (EDC)	**0.179**	0.0040	ug/L	0.162		110	70-130	1.14	30	
cis-1,2-Dichloroethylene	**0.153**	0.020	ug/L	0.159		96.6	70-130	3.46	30	
1,1-Dichloroethylene	**0.163**	0.020	ug/L	0.159		103	70-130	2.04	30	
trans-1,2-Dichloroethylene	**0.160**	0.020	ug/L	0.159		101	70-130	5.38	30	
1,2-Dichloropropane	**0.181**	0.020	ug/L	0.185		97.8	70-130	0.586	30	
trans-1,3-Dichloropropylene	**0.216**	0.020	ug/L	0.182		119	70-130	11.1	30	
cis-1,3-Dichloropropylene	**0.213**	0.020	ug/L	0.182		117	70-130	10.1	30	
Dichlorotetrafluoroethane	**0.301**	0.020	ug/L	0.280		107	70-130	7.46	30	
Ethylbenzene	**0.171**	0.020	ug/L	0.174		98.4	70-130	3.18	30	
4-Ethyltoluene	**0.189**	0.020	ug/L	0.197		96.1	70-130	0.104	30	
Hexachlorobutadiene	**0.509**	0.020	ug/L	0.427		119	70-130	1.33	30	
2-Hexanone (MBK)	**0.175**	0.020	ug/L	0.164		107	70-130	10.6	30	
Isopropanol (IPA)	**0.0764**	0.20	ug/L	0.0865		88.3	70-130	3.07	30	
Methylene Chloride	**0.108**	0.020	ug/L	0.139		77.9	70-130	4.18	30	
4-Methyl-2-pentanone (MIBK)	**0.169**	0.020	ug/L	0.164		103	70-130	9.90	30	
Styrene	**0.186**	0.020	ug/L	0.170		109	70-130	0.229	30	
1,1,2,2-Tetrachloroethane	**0.271**	0.020	ug/L	0.275		98.9	70-130	0.479	30	
Tetrachloroethylene (PCE)	**0.296**	0.010	ug/L	0.271		109	70-130	13.5	30	
Toluene	**0.181**	0.020	ug/L	0.151		120	70-130	10.9	30	
1,2,4-Trichlorobenzene	**0.339**	0.020	ug/L	0.297		114	70-130	2.49	30	
1,1,2-Trichloroethane	**0.281**	0.020	ug/L	0.218		129	70-130	11.5	30	
1,1,1-Trichloroethane	**0.225**	0.020	ug/L	0.218		103	70-130	1.38	30	
Trichloroethylene (TCE)	**0.263**	0.020	ug/L	0.215		122	70-130	3.50	30	
Trichlorofluoromethane (R11)	**0.252**	0.020	ug/L	0.225		112	70-130	7.51	30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1K1626 - *** DEFAULT PREP ****										
LCS Dup (B1K1626-BSD1) Continued				Prepared: 11/12/21 Analyzed: 11/13/21						
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.338**	0.020	ug/L	0.307		110	70-130	6.57	30	
1,3,5-Trimethylbenzene	**0.204**	0.020	ug/L	0.197		104	70-130	0.385	30	
1,2,4-Trimethylbenzene	**0.206**	0.020	ug/L	0.197		105	70-130	0.238	30	
Vinyl acetate	**0.114**	0.020	ug/L	0.118		96.2	70-130	2.66	30	
Vinyl chloride	**0.0948**	0.020	ug/L	0.102		92.7	70-130	3.99	30	
o-Xylene	**0.169**	0.020	ug/L	0.174		97.5	70-130	2.13	30	
m,p-Xylenes	**0.308**	0.020	ug/L	0.347		88.8	70-130	7.54	30	
1,2,3-Trichloropropane	**0.308**	0.020	ug/L	0.241		128	70-130	0.0196	30	
sec-Butylbenzene	**0.283**	0.020	ug/L	0.220		129	70-130	22.4	30	
Isopropylbenzene	**0.251**	0.020	ug/L	0.197		128	70-130	0.588	30	
n-Propylbenzene	**0.249**	0.020	ug/L	0.197		127	70-130	9.76	30	
4-Isopropyltoluene	**0.265**	0.020	ug/L	0.220		121	70-130	0.372	30	
Surrogate: 4-Bromofluorobenzene	*0.138*		*ug/L*	*0.143*		*96.7*	*70-130*			
*Batch B1L0303 - *** DEFAULT PREP ****										
Blank (B1L0303-BLK1)				Prepared & Analyzed: 12/01/21						
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.0025	0.0025	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl Alcohol (TBA)	<2.0	2.0	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1L0303 - *** DEFAULT PREP ****										
Blank (B1L0303-BLK1) Continued				Prepared & Analyzed: 12/01/21						
Chloroform	<0.0040	0.0040	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1L0303 - *** DEFAULT PREP ****										
Blank (B1L0303-BLK1) Continued				Prepared & Analyzed: 12/01/21						
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
Surrogate: 4-Bromofluorobenzene	*0.143*		*ug/L*	*0.143*		*100*	*70-130*			
LCS (B1L0303-BS1)				Prepared & Analyzed: 12/01/21						

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1L0303 - *** DEFAULT PREP ****										
LCS (B1L0303-BS1) Continued				Prepared & Analyzed: 12/01/21						
Acetone	**0.106**	0.020	ug/L	0.0950		112	70-130			
Benzene	**0.127**	0.0030	ug/L	0.128		99.6	70-130			
Benzyl chloride	**0.172**	0.020	ug/L	0.178		96.7	70-130			
Bromodichloromethane	**0.304**	0.0025	ug/L	0.268		113	70-130			
Bromoform	**0.492**	0.020	ug/L	0.413		119	70-130			
Bromomethane	**0.127**	0.020	ug/L	0.155		82.0	70-130			
2-Butanone (MEK)	**0.122**	0.020	ug/L	0.118		103	70-130			
Carbon Disulfide	**0.132**	0.020	ug/L	0.125		106	70-130			
Carbon Tetrachloride	**0.289**	0.020	ug/L	0.252		115	70-130			
Chlorobenzene	**0.198**	0.020	ug/L	0.184		108	70-130			
Chloroethane	**0.105**	0.020	ug/L	0.106		99.2	70-130			
Chloroform	**0.214**	0.0040	ug/L	0.195		110	70-130			
Chloromethane	**0.0786**	0.020	ug/L	0.0826		95.2	70-130			
Dibromochloromethane	**0.425**	0.020	ug/L	0.341		125	70-130			
1,2-Dibromoethane (EDB)	**0.372**	0.020	ug/L	0.307		121	70-130			
1,2-Dichlorobenzene	**0.253**	0.020	ug/L	0.240		105	70-130			
1,3-Dichlorobenzene	**0.259**	0.020	ug/L	0.240		108	70-130			
1,4-Dichlorobenzene	**0.256**	0.020	ug/L	0.240		106	70-130			
Dichlorodifluoromethane (R12)	**0.216**	0.020	ug/L	0.198		109	70-130			
1,1-Dichloroethane	**0.162**	0.020	ug/L	0.162		100	70-130			
1,2-Dichloroethane (EDC)	**0.187**	0.0040	ug/L	0.162		115	70-130			
cis-1,2-Dichloroethylene	**0.173**	0.020	ug/L	0.159		109	70-130			
1,1-Dichloroethylene	**0.163**	0.020	ug/L	0.159		103	70-130			
trans-1,2-Dichloroethylene	**0.165**	0.020	ug/L	0.159		104	70-130			
1,2-Dichloropropane	**0.194**	0.020	ug/L	0.185		105	70-130			
trans-1,3-Dichloropropylene	**0.204**	0.020	ug/L	0.182		112	70-130			
cis-1,3-Dichloropropylene	**0.209**	0.020	ug/L	0.182		115	70-130			
Dichlorotetrafluoroethane	**0.300**	0.020	ug/L	0.280		107	70-130			
Ethylbenzene	**0.173**	0.020	ug/L	0.174		99.7	70-130			
4-Ethyltoluene	**0.198**	0.020	ug/L	0.197		101	70-130			
Hexachlorobutadiene	**0.444**	0.020	ug/L	0.427		104	70-130			
2-Hexanone (MBK)	**0.167**	0.020	ug/L	0.164		102	70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
*Batch B1L0303 - *** DEFAULT PREP ****										
LCS (B1L0303-BS1) Continued				Prepared & Analyzed: 12/01/21						
Isopropanol (IPA)	**0.108**	0.20	ug/L	0.0865		124	70-130			
Methylene Chloride	**0.136**	0.020	ug/L	0.139		97.7	70-130			
4-Methyl-2-pentanone (MIBK)	**0.167**	0.020	ug/L	0.164		102	70-130			
Styrene	**0.174**	0.020	ug/L	0.170		102	70-130			
1,1,2,2-Tetrachloroethane	**0.253**	0.020	ug/L	0.275		92.0	70-130			
Tetrachloroethylene (PCE)	**0.345**	0.010	ug/L	0.271		127	70-130			
Toluene	**0.164**	0.020	ug/L	0.151		109	70-130			
1,2,4-Trichlorobenzene	**0.285**	0.020	ug/L	0.297		96.1	70-130			
1,1,2-Trichloroethane	**0.254**	0.020	ug/L	0.218		117	70-130			
1,1,1-Trichloroethane	**0.231**	0.020	ug/L	0.218		106	70-130			
Trichloroethylene (TCE)	**0.255**	0.020	ug/L	0.215		119	70-130			
Trichlorofluoromethane (R11)	**0.244**	0.020	ug/L	0.225		109	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**0.364**	0.020	ug/L	0.307		119	70-130			
1,3,5-Trimethylbenzene	**0.192**	0.020	ug/L	0.197		97.5	70-130			
1,2,4-Trimethylbenzene	**0.187**	0.020	ug/L	0.197		95.3	70-130			
Vinyl acetate	**0.127**	0.020	ug/L	0.118		107	70-130			
Vinyl chloride	**0.0965**	0.020	ug/L	0.102		94.3	70-130			
o-Xylene	**0.165**	0.020	ug/L	0.174		94.8	70-130			
m,p-Xylenes	**0.296**	0.020	ug/L	0.347		85.2	70-130			
1,2,3-Trichloropropane	**0.269**	0.020	ug/L	0.241		111	70-130			
sec-Butylbenzene	**0.243**	0.020	ug/L	0.220		111	70-130			
Isopropylbenzene	**0.225**	0.020	ug/L	0.197		114	70-130			
n-Propylbenzene	**0.218**	0.020	ug/L	0.197		111	70-130			
4-Isopropyltoluene	**0.250**	0.020	ug/L	0.220		114	70-130			
Surrogate: 4-Bromofluorobenzene	*0.152*		*ug/L*	*0.143*		*106*	*70-130*			
Fixed Gases by TCD - Quality Control										
*Batch B1K0505 - *** DEFAULT PREP ****										
Blank (B1K0505-BLK1)				Prepared & Analyzed: 11/05/21						
Methane	<0.10	0.10	% by Volume							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B1K0505 - *** DEFAULT PREP ****										
Blank (B1K0505-BLK1) Continued				Prepared & Analyzed: 11/05/21						
Oxygen	**0.581**	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B1K0505-BS1)				Prepared & Analyzed: 11/05/21						
Methane	**2.79**	0.10	% by Volume				70-130			
Oxygen	**2.23**	0.10	% by Volume				70-130			
Carbon Dioxide	**8.56**	0.10	% by Volume				70-130			
LCS Dup (B1K0505-BSD1)				Prepared & Analyzed: 11/05/21						
Methane	**2.76**	0.10	% by Volume				70-130	0.974	30	
Oxygen	**2.24**	0.10	% by Volume				70-130	0.402	30	
Carbon Dioxide	**8.55**	0.10	% by Volume				70-130	0.0701	30	
Duplicate (B1K0505-DUP1)				**Source: 1K01011-04**	Prepared & Analyzed: 11/05/21					
Methane	**<0.20**	0.20	% by Volume		<0.20				30	
Oxygen	**5.50**	0.20	% by Volume		5.40			1.76	30	
Carbon Dioxide	**13.4**	0.20	% by Volume		13.5			1.46	30	
*Batch B1K0818 - *** DEFAULT PREP ****										
Blank (B1K0818-BLK1)				Prepared & Analyzed: 11/08/21						
Methane	<0.10	0.10	% by Volume							
Oxygen	**1.04**	0.10	% by Volume							

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B1K0818 - *** DEFAULT PREP ****										
Blank (B1K0818-BLK1) Continued				Prepared & Analyzed: 11/08/21						
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B1K0818-BS1)				Prepared & Analyzed: 11/08/21						
Methane	**2.64**	0.10	% by Volume				70-130			
Oxygen	**2.44**	0.10	% by Volume				70-130			
Carbon Dioxide	**7.43**	0.10	% by Volume				70-130			
LCS Dup (B1K0818-BSD1)				Prepared & Analyzed: 11/08/21						
Methane	**2.84**	0.10	% by Volume				70-130	7.35	30	
Oxygen	**2.30**	0.10	% by Volume				70-130	6.20	30	
Carbon Dioxide	**8.72**	0.10	% by Volume				70-130	16.0	30	
Duplicate (B1K0818-DUP1)		**Source: 1K01011-14**		Prepared & Analyzed: 11/08/21						
Methane	**<0.20**	0.20	% by Volume		<0.20				30	
Oxygen	**5.48**	0.20	% by Volume		22.2			121	30	
Carbon Dioxide	**11.2**	0.20	% by Volume		<0.20				30	
*Batch B1K1116 - *** DEFAULT PREP ****										
Blank (B1K1116-BLK1)				Prepared & Analyzed: 11/12/21						
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B1K1116-BS1)				Prepared & Analyzed: 11/12/21						

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B1K1116 - *** DEFAULT PREP ****										
Methane	**2.91**	0.10	% by Volume				70-130			
Oxygen	**2.19**	0.10	% by Volume				70-130			
Carbon Dioxide	**8.01**	0.10	% by Volume				70-130			
LCS Dup (B1K1116-BSD1)				Prepared & Analyzed: 11/12/21						
Methane	**2.86**	0.10	% by Volume				70-130	1.53	30	
Oxygen	**2.17**	0.10	% by Volume				70-130	0.735	30	
Carbon Dioxide	**8.44**	0.10	% by Volume				70-130	5.24	30	
Duplicate (B1K1116-DUP1)				**Source: 1K01011-32**	Prepared & Analyzed: 11/12/21					
Methane	**<0.20**	0.20	% by Volume		<0.20				30	
Oxygen	**23.2**	0.20	% by Volume		22.3			4.05	30	
Carbon Dioxide	**<0.20**	0.20	% by Volume		<0.20				30	
*Batch B1K1522 - *** DEFAULT PREP ****										
Blank (B1K1522-BLK1)				Prepared & Analyzed: 11/15/21						
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B1K1522-BS1)				Prepared & Analyzed: 11/15/21						
Methane	**2.79**	0.10	% by Volume				70-130			
Oxygen	**2.50**	0.10	% by Volume				70-130			

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B1K1522 - *** DEFAULT PREP ****										
LCS (B1K1522-BS1) Continued				Prepared & Analyzed: 11/15/21						
Carbon Dioxide	**7.81**	0.10	% by Volume				70-130			
LCS Dup (B1K1522-BSD1)				Prepared & Analyzed: 11/15/21						
Methane	**2.83**	0.10	% by Volume				70-130	1.21	30	
Oxygen	**2.33**	0.10	% by Volume				70-130	7.17	30	
Carbon Dioxide	**8.27**	0.10	% by Volume				70-130	5.73	30	
Duplicate (B1K1522-DUP1)				**Source: 1K01011-45** Prepared & Analyzed: 11/15/21						
Methane	**<0.20**	0.20	% by Volume		<0.20				30	
Oxygen	**22.1**	0.20	% by Volume		21.6			2.47	30	
Carbon Dioxide	**<0.20**	0.20	% by Volume		<0.20				30	
*Batch B1K1621 - *** DEFAULT PREP ****										
Blank (B1K1621-BLK1)				Prepared & Analyzed: 11/16/21						
Methane	<0.10	0.10	% by Volume							
Oxygen	**0.886**	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B1K1621-BS1)				Prepared & Analyzed: 11/16/21						
Methane	**2.79**	0.10	% by Volume				70-130			
Oxygen	**2.50**	0.10	% by Volume				70-130			
Carbon Dioxide	**2.81**	0.10	% by Volume				70-130			
LCS Dup (B1K1621-BSD1)				Prepared & Analyzed: 11/16/21						

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187341
Date Received: 11/01/21
Date Reported: 12/03/21

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B1K1621 - *** DEFAULT PREP ****										
Methane	**2.83**	0.10	% by Volume				70-130	1.21	30	
Oxygen	**2.33**	0.10	% by Volume				70-130	7.17	30	
Carbon Dioxide	**8.27**	0.10	% by Volume				70-130	98.6	30	
Duplicate (B1K1621-DUP1)				**Source: 1K01011-57**	Prepared & Analyzed: 11/16/21					
Methane	**<0.20**	0.20	% by Volume		<0.20				30	
Oxygen	**22.1**	0.20	% by Volume		21.5			2.75	30	
Carbon Dioxide	**<0.20**	0.20	% by Volume		<0.20				30	

Allen Aminian
QA/QC Manager

LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	**AA Project No:**	MB187341
Project No:	693142	**Date Received:**	11/01/21
Project Name:	KMEP Norwalk Biosparge Startup	**Date Reported:**	12/03/21

Special Notes

[1] = **E** : The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

[2] = **QL-02** : The recovery for this analyte is outside of the acceptance control limits for the LCS. The data was validated based on the acceptable recovery for this analyte in the LCSD.

[3] = **QL-03** : The recovery for this analyte is outside of the acceptance control limits for the LCSD. The data was validated based on the acceptable recovery for this analyte in the LCS.

[4] = **QL-04** : The recovery for this analyte in the LCS and LCSD is marginally above the upper control limit. Since the analyte was not detected in any of the associated samples, the analytical results for this analyte are valid.

Allen Aminian
QA/QC Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23611
20204891
Page 1 of 2

Client: Jacobs	**Project Name / No.:** Norwalk	**Sampler's Name:** Jun Kadu
Project Manager: Nils . O	**Site Address:** 1530 Norwalk blvd	**Sampler's Signature:**
Phone:	**City:** Norwalk	**P.O. No.:**
Fax:	**State & Zip:**	**Quote No.:**

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO-3	Fixed gases								Special Instructions
Ambient Air	1K01011 -01	11/1/21	835	Sum	1	X	X	X								
Sum-12-7	-02		835			X										
Sum-12-15	-03		835			X										
Sum-12-22	-04		835			X										
Sum-11-7	-05		905			X										
Sum-11-15	-06		905			X										
Sum-11-22	-07		905			X										
Sum-13-7	-08		938			X										
Sum-13-15	-09		938			X										
Sum-13-22	-10		938			X										
Sum-14R-8	-11		1020			X										
Sum-14R-16	-12		1020			X										
Sum-14R-22	-13		1020			X										
Sum-20-5	-14		1055			X										
Sum-20-14.5	-15		1055			X										

For Laboratory Use

REVIEWED
Date 11/9/21 Time 15:30
TAT 10 Days Sign:

A.A. Project No.: M1318-7341 / 1K01011

	Date	Time	
Relinquished by	11/1/21	1200	Received by
Relinquished by	11/1/21	13 14	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23612
20204890
Page 2 of 2

Client: Jacobs	**Project Name / No.:** Norwalk	**Sampler's Name:** Juan Rodriguez	
Project Manager: Nils O.	**Site Address:** 1536 Norwalk	**Sampler's Signature:**	
Phone:	**City:** Norwalk	**P.O. No.:**	
Fax:	**State & Zip:** CA	**Quote No.:**	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO-3	Fixed Gas							Special Instructions
SVM-18-5	1K01011-16	11/1/21	1125	Sume	1	X	X	X							
SVM-18-14.5	-17		1125			X									
SVM-18-14.5 Dup	-18		1125			X									
SVM-19-5	-19		1140			X	4								

For Laboratory Use

REVIEWED
Date 11/9/21 Time 15:31
TAT 10 Days Sign:

A.A. Project No.: M318-1341 / 1K01011

Relinquished by	Date	Time	Received by
	11/1/21	1200	
Relinquished by	Date	Time	Received by
	11/1/21	13:19	
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23626
20204892
Page 1 of 2

Client: Jacobs		Project Name / No.: Norwalk		Sampler's Name: Juan Rodriguez	
Project Manager: Niels .6		Site Address: Norwalk blvd		Sampler's Signature:	
Phone:		City: Norwalk		P.O. No.:	
Fax:		State & Zip: CA		Quote No.:	

TAT Turnaround Codes **

① = Same Day Rush ④ = 72 Hour Rush
② = 24 Hour Rush ⑤ = 5 Day Rush
③ = 48 Hour Rush X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name) — Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO3	Fixed Gases							Special Instructions
Ambient Air	1K0101I -20	11/2/21	740	SVAcan	1	X	7	8							
SVM-26-10	21	↓	800	↓	1	X	↓	↓							
SVM-26-5	22		800		1	X									
SVM-27-5	23		823		1	X									
SVM-27-10	24		825		1	X									
SVM-24-5	25		905		1	X									
SVM-24-10	26		905		1	X									
SVM-25-5	27		945		1	X									
SVM-25-10	28		945		1	X									
SVM-21-5	29		1030		1	X									
SVM-21-14.5	30		1030		1	X									
SVM-23-5	31		1100		1	X									
SVM-23-14.5	32		1100		1	X									
SVM-22-5	33		1130		1	X									
SVM-22-14.5	34	↓	1130	↓	1	X	4	7							

For Laboratory Use

REVIEWED
Date 11/9/21 Time 1513
TAT 10 Days Sign
A.A. Project No.: M318734 / 1K0101I

Relinquished by	Date	Time	Received by
Nathan Harrison	11/2/21	1210	[signature]
[signature]	11/2/21	13 35	[signature]

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23627
20204893
Page 2 of 2

Client: Jacobs	**Project Name / No.:** Norwalk	**Sampler's Name:** Dan Rodrigo
Project Manager: Nils O.	**Site Address:** Norwalk blvd	**Sampler's Signature:**
Phone:	**City:** Norwalk	**P.O. No.:**
Fax:	**State & Zip:** CA	**Quote No.:**

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO-3	Field Gases							Special Instructions
Sim-17-5	1K01011 – 35	11/2/21	1200	Soil Gas	1	X	X	X							
Sim-17-14.5	– 36	"	1200	"	1	X	X	X							

For Laboratory Use

RECEIVED
Date 11/9/21 Time 15:31
TAT 10 Days Sign:

A.A. Project No.: MB18734 / 1K01011

	Date	Time	
Relinquished by: Nathan Harrison	11/2/21	1210	Received by:
Relinquished by:	11/2/21	13:35	Received by:
Relinquished by:	Date	Time	Received by:

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23642
20204895
Page 1 of 1

Client: Jacobs	**Project Name / No.:** Norwalk	**Sampler's Name:** Juan Rodriguez	
Project Manager: Nils. O	**Site Address:** Norwalk blvd	**Sampler's Signature:**	
Phone:	**City:** Norwalk	**P.O. No.:**	
Fax:	**State & Zip:** CA	**Quote No.:**	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO-3	Field Gases	Special Instructions
SVM-15-7	1K01011-37	11/3/21	822	Summa	1	X	X	X	
SVM-15-15	-38		827			X			
SVM-15-22	39		822			X			
Ambient Air	40		820			X			
SVM-6-7	41		845			X			
SVM-6-13	42		845			X			
SVM-7-7	43		910			X			
SVM-7-13	44		910			X			
SVM-10-15	45		935			X			
SVM-9-5	46		1010			X			
SVM-9-14.5	47		1030			X			
SVM-9-14.5DUP	48		1030			X			
SVM-1-5	49		1055			X			
SVM-1-15	50		1055			X			
SVM-2-5	51	↓	1120	↓	↓	X	4	4	

For Laboratory Use

REVIEWED
Date 11/9/21 Time 1532
TAT 10 Days Sign:
BAC

A.A. Project No.: ~~MB16342~~ MB16734 1/1K01011

	Date	Time	
Relinquished by: Jacobs	11/3/21	1135	Received by
Relinquished by	11/3/21	14 14	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 23616
20204898
Page 1 of 1

Client: Jacobs	**Project Name / No.:** Norwalk	**Sampler's Name:** Juan Rodriguez	
Project Manager: M/S. O	**Site Address:** Norwalk blvd	**Sampler's Signature:**	
Phone:	**City:** Norwalk	**P.O. No.:**	
Fax:	**State & Zip:** CA	**Quote No.:**	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TO15	TO-3	Fixed Gas							Special Instructions
						Please enter the TAT Turnaround Codes ** below									
Ambient Air	1K01011 - 52	11/4/21	834	Svvs	1	X	X	X							
Svm-3-5	- 53		837			X									
Svm-3-15	- 54		837			X									
Svm-5-5	- 55		905			X									
Svm-5-15	- 56		905			X									
Svm-8-5	- 57		925			X									
Svm-8-15	- 58		925			X									
Svm-16-7.	- 59		1005			X									
Svm-16-7Dup	- 60		1005			X									
Svm-16-16	- 61		958			X									
Svm-16-22	- 62		959			X	X	X							

For Laboratory Use

REVIEWED
Date 11/9/21 Time 15:32
TAT 10 Days Sign:

A.A. Project No.: M318 1341 1K01011

	Date	Time	
Relinquished by	11/4/21	1020	Received by
Relinquished by	11/4/21	1143	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.