

TABLES



TABLE 1
RACER Trust - Coldwater Road
Vapor Intrusion Sampling - Detections
Soil Vapor Results December 2017 through August 2021

Compound	Sample ID: Units:	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 2 & 3 (slab-on-grade & basement) µg/m ³	VP-2S µg/m ³	VP-2S (VP- DUP-1) µg/m ³	VP-2S µg/m ³	VP-2S µg/m ³	VP-2D µg/m ³	VP-2D µg/m ³	VP-2D µg/m ³	VP-2D µg/m ³
	Sample Date:		12/8/2017	12/8/2017	6/29/2018	11/18/2019	11/18/2019	2/22/2021	5/27/2021	8/26/2021
Acetone	NA	<48	<48	<48	<48	<48	<48	<48	120	48
Benzene	110 ca	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	9.6	13	<6.4
Carbon Disulfide	NA	<16	<16	<16	<16	<16	<16	<16	<16	<16
Chloroform	NA	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
Cyclohexane	2.1E+05 nc	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9
1,2-Dichloroethane	33 ca	8.1	12	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1
Ethanol	6.3E+05 (EE) st	<47	<47	<47	<47	<47	<230	110	<47	<47
Ethylbenzene	340 ca	<8.7	<8.7	8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7
Heptane	1.2E+05 nc	<8.2	<8.2	12	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2
Hexane	24,000 nc	<7.0	<7.0	14	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0
Isopropyl Alcohol	7,000 nc	49	74	<49	<49	<49	<49	<49	<49	49
Methylene Chloride	NA	<17	<17	<17	<17	<17	<17	<17	<17	<17
2-Butanone (MEK)	1.7E+05 (DD) dev	<29	<29	<29	<29	<29	<59	<59	<59	<59
Propylene	NA	<3.4	<3.4	<3.4	<3.4	<3.4	<170	<170	<170	<170
1,2,4-Trimethylbenzene	2,100 (JT) nc	<9.8	<9.8	15	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
2,2,4-Trimethylpentane	1.2E+05 nc	<9.3	<9.3	14	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3
Tert-butyl Alcohol	NA	<30	<30	<30	<30	<30	<30	<30	<30	<30
Tetrachloroethene	1,400 (EE) st	<14	<14	<14	<14	<14	<14	<14	<14	<14
Tetrahydrofuran	70,000 nc	<5.9	<5.9	24	18	12	21	21	21	21
Toluene	1.7E+05 nc	<7.5	<7.5	41	<7.5	<7.5	<7.5	<7.5	<7.5	11
Trichloroethene	67 (DD) dev	<11	<11	32	<11	<11	<11	<11	<11	<11
p,m-Xylene	NA	<17	<17	30	<17	<17	<17	<17	<17	<17
o-Xylene	NA	<8.7	<8.7	13	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7
Total Xylene	7,600 (J) nc	<26	<26	43	<26	<26	<26	<26	<26	<26

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Soil Vapor Results December 2017 through August 2021

Compound	Sample ID: Units: Sample Date:	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (crawl space with a dirt floor) µg/m ³	VP-1S µg/m ³	VP-1S µg/m ³	VP-1S (DUP-1) µg/m ³	VP-1S µg/m ³	VP-1S (VP- DUP-1) µg/m ³	VP-1S µg/m ³	VP-1S (DUP- 052721) µg/m ³	VP-1S µg/m ³	VP-1D µg/m ³
			12/8/2017	6/29/2018	6/29/2018	11/19/2019	11/19/2019	5/27/2021	5/27/2021	8/26/2021	12/8/2017
Acetone	NA	<48	<48	48	<48	<48	<48	95	95	<48	95
Benzene	3.3 ca	<6.4	<6.4	9.6	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	13
Carbon Disulfide	NA	<16	<16	37	22	<16	<16	<16	<16	<16	<16
Chloroform	NA	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
Cyclohexane	6,300 nc	<6.9	<6.9	14	10	<6.9	<6.9	<6.9	<6.9	<6.9	17
1,2-Dichloroethane	0.98 ca	85	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	130
Ethanol	19,000 (EE) st	<64 X	<57 X	<47	<47	<47	<47	140	150	75	<130 X
Ethylbenzene	10 ca	<8.7	<8.7	13	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7
Heptane	3,700 nc	<8.2	<8.2	25	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	12
Hexane	730 nc	56	74	49	11	7	<7.0	<7.0	<7.0	<7.0	130
Isopropyl Alcohol	210 nc	370	<49	<49	<49	<49	<49	<49	<49	120	590
Methylene Chloride	NA	<17	<17	<17	<17	<17	<17	<17	<17	<17	<17
2-Butanone (MEK)	5,000 (DD) dev	<29	<29	<29	<29	<29	<29	<59	<59	<59	<29
Naphthalene	0.75 ca	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Propylene	NA	618	<262 X	<186 X	<6.9 X	<6.9 X	<170	<170	<170	<170	303
1,2,4-Trimethylbenzene	63 (JT) nc	<37	25	15	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	15
2,2,4-Trimethylpentane	3,700 nc	9.3	47	28	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	37
Tert-butyl Alcohol	NA	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Tetrachloroethene	41 (EE) st	27	<14	<14	<14	<14	<14	<14	<14	<14	<14
Tetrahydrofuran	2,100 nc	<5.9	27	18	8.8	8.8	38	35	27	27	<5.9
Toluene	5,200 nc	34	57	41	11	11	7.5	7.5	15	15	57
Trichloroethene	2.0 (DD) dev	<11	43	91	<11	<11	<11	<11	<11	<11	<11
p,m-Xylene	NA	<17	39	22	<17	<17	<17	<17	<17	<17	22
o-Xylene	NA	<8.7	17	8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7
Total Xylene	230 (J)	<26	56	30	<26	<26	<26	<26	<26	<26	<26

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Soil Vapor Results December 2017 through August 2021

Compound	Sample ID: Units:	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (crawl space with a dirt floor) µg/m ³	VP-3S	VP-3S	VP-3S	VP-3S	VP-3S	VP-3D	VP-5S	VP-5S	VP-5S	VP-5S
			µg/m ³	µg/m ³	µg/m ³	(DUP-1) µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	(DUP-1) µg/m ³	µg/m ³
Sample Date:			6/29/2018	11/19/2019	2/22/2021	2/22/2021	8/26/2021	6/29/2018	10/25/2018	10/25/2018	11/18/2019	2/22/2021
Acetone	NA		48	<48	<48	<48	<48	570	<48	<48	71	<48
Benzene	3.3 ca		16	<6.4	<6.4	<6.4	<6.4	16	<6.4	<6.4	<6.4	<6.4
Carbon Disulfide	NA		56	<16	<16	<16	<16	40	75	78	<16	<16
Chloroform	NA		15	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
Cyclohexane	6,300 nc		<6.9	<6.9	<6.9	<6.9	<6.9	6.9	<6.9	<6.9	<6.9	<6.9
1,2-Dichloroethane	0.98 ca		<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1
Ethanol	19,000 (EE) st		<47	<47	<230	<230	130	2,116 E	<47	<47	89	<230
Ethylbenzene	10 ca		<8.7	<8.7	<8.7	<8.7	<8.7	130	<8.7	<8.7	<8.7	<8.7
Heptane	3,700 nc		16	<8.2	<8.2	<8.2	<8.2	25	<8.2	<8.2	<8.2	<8.2
Hexane	730 nc		25	<7.0	<7.0	<7.0	11	63	7.0	7.0	<7.0	<7.0
Isopropyl Alcohol	210 nc		<49	<49	<49	<49	250	170	<49	<49	<49	<49
Methylene Chloride	NA		<17	<17	<17	<17	<17	<17	<17	<17	<17	<17
2-Butanone (MEK)	5,000 (DD) dev		<29	<29	<59	<59	<59	59	<29	<29	<29	<29
Naphthalene	0.75 ca		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Propylene	NA		<21 X	<3.4	<170	<170	<170	1,800 E	<8.6 X	<6.9 X	<91 X	<170
1,2,4-Trimethylbenzene	63 (JT) nc		15	<9.8	<9.8	<9.8	15	<37	<9.8	<9.8	<9.8	<9.8
2,2,4-Trimethylpentane	3,700 nc		14	<9.3	<9.3	<9.3	9.3	28	<9.3	<9.3	<9.3	<9.3
Tert-butyl Alcohol	NA		<30	<30	<30	<30	<30	120	<30	<30	<30	<30
Tetrachloroethene	41 (EE) st		<14	<14	<14	<14	<14	<14	<14	<14	<14	<14
Tetrahydrofuran	2,100 nc		15	8.8	12	12	24	8.8	12	12	44	<5.9
Toluene	5,200 nc		49	11	<7.5	<7.5	26	60	38	38	11	<7.5
Trichloroethene	2.0 (DD) dev		<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
p,m-Xylene	NA		30	<17	<17	<17	17	380	<17	<17	<17	<17
o-Xylene	NA		13	<8.7	<8.7	<8.7	<8.7	96	<8.7	<8.7	<8.7	<8.7
Total Xylene	230 (J)		43	<26	<26	<26	<26	480	<26	<26	<26	<26

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Compound	Sample ID: Units:	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (crawl space with a dirt floor) µg/m ³	VP-5M	VP-5M	VP-5M	VP-5M	VP-5M	VP-5D	VP-5D	VP-5D	VP-6S	VP-6S
			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Sample Date:			10/25/2018	11/18/2019	2/22/2021	8/26/2021	8/26/2021	11/18/2019	2/22/2021	8/26/2021	10/25/2018	8/26/2021
Acetone	NA	<48	<48	<48	<48	260	260	<48	<48	<48	<48	48
Benzene	3.3 ca	9.6	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	89
Carbon Disulfide	NA	290	<16	<16	<16	<16	<16	<16	<16	<16	140	<16
Chloroform	NA	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
Cyclohexane	6,300 nc	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	10
1,2-Dichloroethane	0.98 ca	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1	<8.1
Ethanol	19,000 (EE) st	<47	<47	<230	948	799	<47	<230	160	<47	<47	<47
Ethylbenzene	10 ca	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	13
Heptane	3,700 nc	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	<8.2	20
Hexane	730 nc	18	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	11	32
Isopropyl Alcohol	210 nc	<49	<49	<49	1,900	1,700	<49	<49	120	<49	<49	120
Methylene Chloride	NA	<17	<17	<17	<17	<17	<17	<17	<17	<17	<17	<17
2-Butanone (MEK)	5,000 (DD) dev	<29	<29	<59	<59	<59	<29	<59	<59	<59	<29	<59
Naphthalene	0.75 ca	<10	<10	<10	73	<10	<10	<10	<10	<10	<10	<10
Propylene	NA	<62 X	<6.9 X	<170	<170	<170	<3.4	<170	<170	<170	<15 X	<170
1,2,4-Trimethylbenzene	63 (JT) nc	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	25
2,2,4-Trimethylpentane	3,700 nc	14	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	14
Tert-butyl Alcohol	NA	<30	<30	<30	<30	30	<30	<30	<30	<30	<30	<30
Tetrachloroethene	41 (EE) st	<14	<14	<14	<14	<14	<14	<14	<14	<14	<14	<14
Tetrahydrofuran	2,100 nc	15	27	<5.9	15	15	15	8.8	12	12	12	32
Toluene	5,200 nc	45	<7.5	<7.5	11	7.5	<7.5	<7.5	<7.5	<7.5	19	64
Trichloroethene	2.0 (DD) dev	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
p,m-Xylene	NA	22	<17	<17	<17	<17	<17	<17	<17	<17	<17	39
o-Xylene	NA	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	17
Total Xylene	230 (J)	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26	56

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TABLE 1
RACER Trust - Coldwater Road
Vapor Intrusion Sampling - Detections
Soil Vapor Results December 2017 through August 2021

Compound	Sample ID:	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (crawlspcace with a dirt floor) $\mu\text{g}/\text{m}^3$	VP-6M	VP-6M	VP-6D	VP-6D
	Units:		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
	Sample Date:		10/25/2018	5/27/2021	10/25/2018	11/18/2019
Acetone		NA	<48	71	<48	95
Benzene		3.3 ca	<6.4	<6.4	<6.4	<6.4
Carbon Disulfide		NA	250	<16	<16	<16
Chloroform		NA	<9.8	<9.8	<9.8	<9.8
Cyclohexane		6,300 nc	<6.9	<6.9	<6.9	<6.9
1,2-Dichloroethane		0.98 ca	<8.1	<8.1	<8.1	<8.1
Ethanol		19,000 (EE) st	<47	55	<47	85
Ethylbenzene		10 ca	<8.7	<8.7	<8.7	<8.7
Heptane		3,700 nc	<8.2	<8.2	<8.2	<8.2
Hexane		730 nc	<7.0	<7.0	<7.0	49
Isopropyl Alcohol		210 nc	<49	<49	<49	<49
Methylene Chloride		NA	<17	<17	<17	28
2-Butanone (MEK)		5,000 (DD) dev	<29	<59	<29	<29
Naphthalene		0.75 ca	<10	<10	<10	<10
Propylene		NA	<12 X	<170	<3.9	12
1,2,4-Trimethylbenzene		63 (JT) nc	<9.8	<9.8	<9.8	<9.8
2,2,4-Trimethylpentane		3,700 nc	<9.3	<9.3	<9.3	<9.3
Tert-butyl Alcohol		NA	<30	<30	<30	<30
Tetrachloroethene		41 (EE) st	<14	<14	<14	<14
Tetrahydrofuran		2,100 nc	8.8	24	5.9	29
Toluene		5,200 nc	15	30	11	23
Trichloroethene		2.0 (DD) dev	<11	<11	<11	<11
p,m-Xylene		NA	<17	17	<17	<17
o-Xylene		NA	<8.7	<8.7	<8.7	<8.7
Total Xylene		230 (J)	<26	<26	<26	<26

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TABLE 1
RACER Trust - Coldwater Road
Vapor Intrusion Sampling - Detections
Soil Vapor Results December 2017 through August 2021

Notes

- 1) Concentrations above both the EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria Table 1 (crawl-space with a dirt floor) and Table 2 & 3 (slab-on-grade & basement) are highlighted in yellow.
- 3) Concentrations in $\mu\text{g}/\text{m}^3$ as noted
- 4) Detections highlighted in bold.
- 5) < = Not detected at specified reporting limit.
- 6) DUP = Duplicate sample.
- 7) NA = means not available.
- 8) Light gray header is most recent sampling event result.
- 9) Acceptable Air Values (AAV) endpoint basis used for site-specific criterion: (ca) = Carcinogenic; (nc) = Non-Carcinogenic; (dev) = Developmental; (mut) = Mutagenic cancer; (st) = Short-term (i.e., less than chronic exposure): Agency for Toxic Substances and Disease Registry Inhalation Minimum Risk Level for Acute Inhalation or Intermediate Inhalation exposure durations; U.S. Environmental Protection Agency Integrated Risk Information System Reference Concentration for short-term exposure; of Air Quality Division Acute Initial Threshold Screening Level.
- 10) DD = 'Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- 11) E = Concentration exceeds calibration range.
- 12) EE = The acceptable air concentration (AAC) for the volatile hazardous substances is not derived using standard equations. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the EGLE's Air Quality Division.
- 13) J = Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- 14) JT = Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- 15) X = Elevated reporting limit due to matrix interference.
- 16) Sample was not collected during 12/8/17 event from vapor point VP-2D due to interference with groundwater.
- 17) Samples were not collected during 6/29/18 event from vapor points VP-1D, VP-2D, and VP-3M due to interference with groundwater.
- 18) Samples were not collected during 10/25/18 event from vapor points VP-4S, VP-4M, VP-4D, and VP-5D due to interference with groundwater.
- 19) During the 11/18/19 event groundwater samples were collected from (VP-1D, VP-3M, VP-3D, VP-4S, VP-4M, VP-4D, VP-6S, & VP-6M) where groundwater interference was encountered.
- 20) During the 2/22/21 & 2/23/21 event groundwater samples were collected from (VP-1S, VP-1D, VP-2S, VP-3M, VP-3D, VP-6S, & VP-6M) where groundwater interference was encountered.
- 21) During the 5/27/21 event groundwater samples were collected from (VP-1D, VP-2S, VP-3S, VP-5S, VP-5M, VP-5D, & VP-6S) where groundwater interference was encountered.
- 21) During the 8/26/21 event groundwater samples were attempted or collected from (VP-1D, VP-2S, VP-3M, VP-3D, VP-5S, VP-6M, & VP-6D) where groundwater interference was encountered.

TABLE 2
RACER Trust - Coldwater Road
Volatile Organics (VOCs) Groundwater Analytical Results
Collected from Vapor Probes - November 2019 through August 2021

Well ID	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 2 (Groundwater in Contact) (slab-on-grade)-µg/L	VP-2S	VP-2S	VP-2S	Trip Blank-022321	Trip Blank-052721	Trip Blank-082621
		2/23/2021	5/27/2021	8/26/2021	2/23/2021	5/27/2021	8/26/2021
<i>Sample Date</i>							
Acetone	NA	<50	<50	<50	<50	<50	<50
Acrylonitrile	NA	<2	<2	<2	<2	<2	<2
2-Butanone	2,600 (DD) dev	<25	<25	<25	<25	<25	<25
Benzene	1.0 ca	<1	<1	0.22 J	<1	<1	<1
n-Butylbenzene	44 nc	<1	<1	<1	<1	<1	<1
Bromobenzene	NA	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NA	<1	<1	<1	<1	<1	<1
Bromoform	NA	<1	<1	<1	<1	<1	<1
Bromomethane	NA	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	270 nc	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	7.7E-02 (M) nc	<1	<1	<1	<1	<1	<1
Carbon disulfide	NA	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	NA	<1	<1	<1	<1	<1	<1
Chlorobenzene	NA	<1	<1	<1	<1	<1	<1
Chloroethane	NA	<5	<5	<5	<5	<5	<5
Chloroform	NA	<1	<1	<1	<1	<1	<1
Chloromethane	NA	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	4.7 ca	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NA	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	370 nc	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	1.4 ca	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	2.6 nc	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	2.6 nc	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	5.9 ca	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	3.4 nc	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.78 (MM) (M) mut	<5	<5	<5	<5	<5	<5
Dibromomethane	NA	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	13 nc	<5	<5	<5	<5	<5	<5
Diethyl ether	1,200 nc	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	16 nc	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	<1	<1	<1	<1	<1	<1
Ethylbenzene	2.8 ca	<1	<1	<1	<1	<1	<1
2-Hexanone	660 nc	<50	<50	<50	<50	<50	<50
Hexachloroethane	NA	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	NA	<5	<5	<5	<5	<5	<5
Isopropylbenzene	0.60 (M) ca	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	66 nc	<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone	720 (DD) dev	<50	<50	<50	<50	<50	<50
tert-Methyl butyl ether (MTBE)	250 ca	<5	<5	<5	<5	<5	<5
Methyl iodide	NA	<1	<1	<1	<1	<1	<1
Methylene chloride	NA	<5	<5	<5	<5	<5	<5
Napthalene	4.2 (M) ca	<5	<5	<5	<5	<5	<5
n-Propylbenzene	43 (DD) dev	<1	<1	<1	<1	<1	<1
Styrene	33 ca	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	3.1 ca	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	180 (FF) st	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2.4 ca	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	0.47 (M) nc	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	58 nc	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	NA	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	43 (JT) nc	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	3.8 (M) nc	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	25 (JT) nc	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	18 (JT) nc	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.5 (FF) st	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	45,000 nc	<90	<90	<90	<90	<90	<90
Toluene	300 (FF) st	<1	<1	0.44 J	<1	<1	<1
Trichloroethene	7.3E-02 (M) (DD) dev	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	22 nc	<1	<1	<1	<1	<1	<1
Vinyl chloride	0.12 (MM) (M) mut	<1	<1	<1	<1	<1	<1
o-Xylene	75 (J) nc	<1	<1	<1	<1	<1	<1
p,m-Xylene	75 (J) nc	<2	<2	<2	<2	<2	<2

Notes:
EPA Method 8260 used for analysis.
Analysis in µg/L

TABLE 2
RACER Trust - Coldwater Road
Volatile Organics (VOCs) Groundwater Analytical Results
Collected from Vapor Probes - November 2019 through August 2021

Well ID	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (Groundwater in Contact) (crawl space with a dirt floor)-µg/L	VP-1S	VP-1D	VP-1D	VP-1D	VP-1D	VP-3S
		2/23/2021	11/19/2019	2/23/2021	5/27/2021	8/26/2021	5/27/2021
Acetone	NA	<50	<50	<50	<50	<50	<50
Acrylonitrile	NA	<2	<2	<2	<2	<2	<2
2-Butanone	2,600 (DD) dev	<25	<25	<25	<25	<25	<25
Benzene	0.14 (M) ca*	<1	<1	<1	<1	<1	<1
n-Butylbenzene	9.9 nc	<1	<1	<1	<1	<1	<1
Bromobenzene	NA	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NA	<1	<1	<1	<1	<1	<1
Bromoform	NA	<1	<1	<1	<1	<1	<1
Bromomethane	NA	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	8.1 nc	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	1.9E-02 (M) nc	<1	<1	<1	<1	<1	<1
Carbon disulfide	NA	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	NA	<1	<1	<1	<1	<1	<1
Chlorobenzene	NA	<1	<1	<1	<1	<1	<1
Chloroethane	NA	<5	<5	<5	<5	<5	<5
Chloroform	NA	<1	<1	<1	<1	<1	<1
Chloromethane	NA	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	0.66 (M) ca*	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NA	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	23 nc	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	7.5E-02 (M) ca	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.22 (M) nc*	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	0.19 (M) nc*	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	0.42 (M) ca*	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.36 (M) nc*	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.78 (MM) (M) mut*	<5	<5	<5	<5	<5	<5
Dibromomethane	NA	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	13 nc	<5	<5	<5	<5	<5	<5
Diethyl ether	75 nc	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	3.0 nc	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	<1	<1	<1	<1	<1	<1
Ethylbenzene	0.47 (M) ca*	<1	<1	<1	<1	<1	<1
2-Hexanone	22 (M) nc*	<50	<50	<50	<50	<50	<50
Hexachloroethane	NA	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	NA	<5	<5	<5	<5	<5	<5
Isopropylbenzene	0.11 (M) ca*	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	2.5 (M) nc*	<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone	720 (DD) dev	<50	<50	<50	<50	<50	<50
tert-Methyl butyl ether (MTBE)	12 ca	<5	<5	<5	<5	<5	<5
Methyl iodide	NA	<1	<1	<1	<1	<1	<1
Methylene chloride	NA	<5	<5	<5	<5	<5	<5
Napthalene	0.16 (M) ca*	<5	<5	<5	<5	<5	<5
n-Propylbenzene	43 (DD) dev	<1	<1	<1	<1	<1	<1
Styrene	2.7 ca	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	0.22 (M) ca*	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	180 (FF) st	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	9.2E-02 (M) ca	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	2.2E-02 (M) nc	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	2.9 (M) nc*	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	NA	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	3.7 (M) (JT) nc	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	0.20 (M) nc*	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	3.2 (JT) nc	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	3.0 (JT) nc	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.5 (FF) st	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	1,500 nc	<90	<90	<90	<90	<90	<90
Toluene	300 (FF) st	<1	<1	<1	<1	<1	<1
Trichloroethene	7.3E-02 (M) (DD) dev	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	16 nc	<1	<1	<1	<1	<1	<1
Vinyl chloride	5.1E-02 (MM) (M) mut	<1	<1	<1	<1	<1	<1
o-Xylene	11 (J) nc	<1	<1	<1	<1	<1	<1
p,m-Xylene	11 (J) nc	<2	<2	<2	<2	0.64 J	<2

Notes:
EPA Method 8260 used for analysis.
Analysis in µg/L

TABLE 2
RACER Trust - Coldwater Road
Volatile Organics (VOCs) Groundwater Analytical Results
Collected from Vapor Probes - November 2019 through August 2021

Well ID	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (Groundwater in Contact) (crawl space with a dirt floor)-µg/L	VP-3M	VP-3M	VP-3D	VP-3D	VP-4S	VP-4M	VP-4D
		11/19/2019	2/22/2021	11/19/2019	2/22/2021	11/19/2019	11/19/2019	11/19/2019
Acetone	NA	<50	<50	<50	<50	<50	<50	<50
Acrylonitrile	NA	<2	<2	<2	<2	<2	<2	<2
2-Butanone	2,600 (DD) dev	<25	<25	<25	<25	<25	<25	<25
Benzene	0.14 (M) ca*	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	9.9 nc	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NA	<1	<1	<1	<1	<1	<1	<1
Bromoform	NA	<1	<1	<1	<1	<1	<1	<1
Bromomethane	NA	<5	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	8.1 nc	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	1.9E-02 (M) nc	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	NA	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	NA	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	NA	<1	<1	<1	<1	<1	<1	<1
Chloroethane	NA	<5	<5	<5	<5	<5	<5	<5
Chloroform	NA	<1	<1	<1	<1	<1	<1	<1
Chloromethane	NA	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	0.66 (M) ca*	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NA	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	23 nc	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	7.5E-02 (M) ca	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.22 (M) nc*	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	0.19 (M) nc*	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	0.42 (M) ca*	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.36 (M) nc*	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.78 (MM) (M) mut*	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	NA	<5	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	13 nc	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	75 nc	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	3.0 nc	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	0.47 (M) ca*	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	22 (M) nc*	<50	<50	<50	<50	<50	<50	<50
Hexachloroethane	NA	<5	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	NA	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	0.11 (M) ca*	<5	<5	<5	<5	<5	<5	<5
2-Methylnapthalene	2.5 (M) nc*	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone	720 (DD) dev	<50	<50	<50	<50	<50	<50	<50
tert-Methyl butyl ether (MTBE)	12 ca	<5	<5	<5	<5	<5	<5	<5
Methyl iodide	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	NA	<5	<5	<5	<5	<5	<5	<5
Napthalene	0.16 (M) ca*	<5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	43 (DD) dev	<1	<1	<1	<1	<1	<1	<1
Styrene	2.7 ca	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	0.22 (M) ca*	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	180 (FF) st	<1	<1	<1	<1	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	9.2E-02 (M) ca	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	2.2E-02 (M) nc	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	2.9 (M) nc*	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	3.7 (M) (JT) nc	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	0.20 (M) nc*	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	3.2 (JT) nc	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	3.0 (JT) nc	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.5 (FF) st	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	1,500 nc	<90	<90	<90	<90	<90	<90	<90
Toluene	300 (FF) st	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	7.3E-02 (M) (DD) dev	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	16 nc	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	5.1E-02 (MM) (M) mut	<1	<1	<1	<1	<1	<1	<1
o-Xylene	11 (J) nc	<1	<1	<1	<1	<1	<1	<1
p,m-Xylene	11 (J) nc	<2	<2	<2	<2	<2	<2	<2

Notes:
EPA Method 8260 used for analysis.
Analysis in µg/L

TABLE 2
RACER Trust - Coldwater Road
Volatile Organics (VOCs) Groundwater Analytical Results
Collected from Vapor Probes - November 2019 through August 2021

Well ID	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (Groundwater in Contact) (crawl space with a dirt floor)-µg/L	VP-5S	VP-5M	VP-5D	VP-6S	VP-6S	VP-6S
		5/27/2021	5/27/2021	5/27/2021	11/18/2019	2/22/2021	5/27/2021
Acetone	NA	<50	<50	<50	<50	<50	<50
Acrylonitrile	NA	<2	<2	<2	<2	<2	<2
2-Butanone	2,600 (DD) dev	<25	<25	<25	<25	<25	<25
Benzene	0.14 (M) ca*	<1	<1	<1	<1	<1	<1
n-Butylbenzene	9.9 nc	<1	<1	<1	<1	<1	<1
Bromobenzene	NA	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NA	<1	<1	<1	<1	<1	<1
Bromoform	NA	<1	<1	<1	<1	<1	<1
Bromomethane	NA	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	8.1 nc	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	1.9E-02 (M) nc	<1	<1	<1	<1	<1	<1
Carbon disulfide	NA	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	NA	<1	<1	<1	<1	<1	<1
Chlorobenzene	NA	<1	<1	<1	<1	<1	<1
Chloroethane	NA	<5	<5	<5	<5	<5	<5
Chloroform	NA	<1	<1	<1	<1	<1	<1
Chloromethane	NA	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	0.66 (M) ca*	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NA	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	23 nc	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	7.5E-02 (M) ca	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.22 (M) nc*	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	0.19 (M) nc*	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	0.42 (M) ca*	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.36 (M) nc*	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.78 (MM) (M) mut*	<5	<5	<5	<5	<5	<5
Dibromomethane	NA	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	13 nc	<5	<5	<5	<5	<5	<5
Diethyl ether	75 nc	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	3.0 nc	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	<1	<1	<1	<1	<1	<1
Ethylbenzene	0.47 (M) ca*	<1	<1	<1	<1	<1	<1
2-Hexanone	22 (M) nc*	<50	<50	<50	<50	<50	<50
Hexachloroethane	NA	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	NA	<5	<5	<5	<5	<5	<5
Isopropylbenzene	0.11 (M) ca*	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	2.5 (M) nc*	<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone	720 (DD) dev	<50	<50	<50	<50	<50	<50
tert-Methyl butyl ether (MTBE)	12 ca	<5	<5	<5	<5	<5	<5
Methyl iodide	NA	<1	<1	<1	<1	<1	<1
Methylene chloride	NA	<5	<5	<5	<5	<5	<5
Naphthalene	0.16 (M) ca*	<5	<5	<5	<5	<5	<5
n-Propylbenzene	43 (DD) dev	<1	<1	<1	<1	<1	<1
Styrene	2.7 ca	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	0.22 (M) ca*	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	180 (FF) st	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	9.2E-02 (M) ca	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	2.2E-02 (M) nc	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	2.9 (M) nc*	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	NA	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	3.7 (M) (JT) nc	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	0.20 (M) nc*	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	3.2 (JT) nc	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	3.0 (JT) nc	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.5 (FF) st	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	1,500 nc	<90	<90	<90	<90	<90	<90
Toluene	300 (FF) st	<1	<1	<1	<1	<1	<1
Trichloroethene	7.3E-02 (M) (DD) dev	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	16 nc	<1	<1	<1	<1	<1	<1
Vinyl chloride	5.1E-02 (MM) (M) mut	<1	<1	<1	<1	<1	<1
o-Xylene	11 (J) nc	<1	<1	<1	<1	<1	<1
p,m-Xylene	11 (J) nc	<2	<2	<2	<2	<2	<2

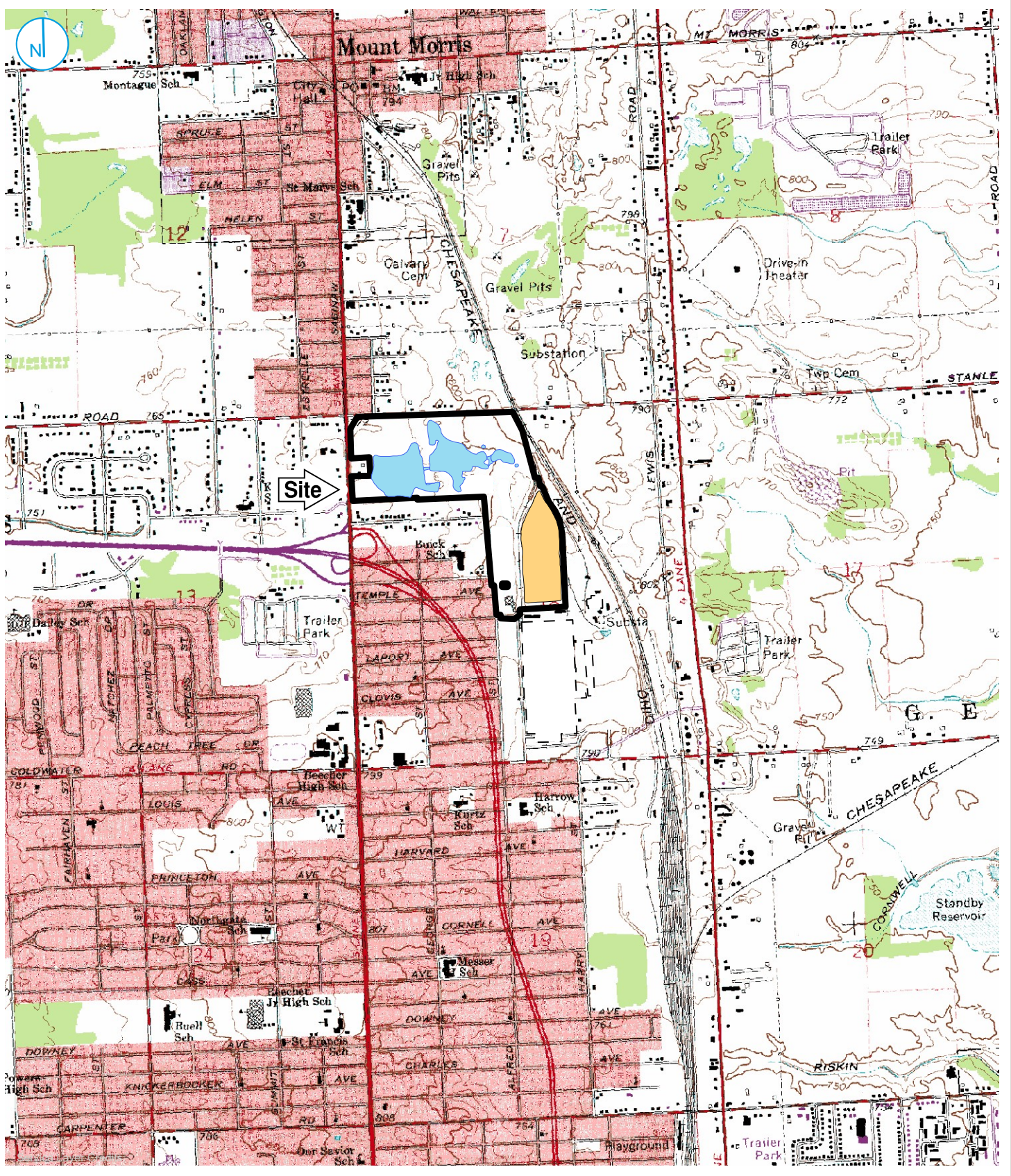
Notes:
EPA Method 8260 used for analysis.
Analysis in µg/L

TABLE 2
RACER Trust - Coldwater Road
Volatile Organics (VOCs) Groundwater Analytical Results
Collected from Vapor Probes - November 2019 through August 2021

Well ID	EGLE Site-Specific Residential Volatilization to Indoor Air (VIAC) Criteria- Table 1 (Groundwater in Contact) (crawlpace with a dirt floor)-µg/L	VP-6M	VP-6M	VP-6M	Trip Blank-111919	Trip Blank-022321	Trip Blank-052721	Trip Blank-082621
		11/18/2019	2/22/2021	8/26/2021	11/19/2019	2/23/2021	5/27/2021	8/26/2021
Acetone	NA	<50	<50	<50	<50	<50	<50	<50
Acrylonitrile	NA	<2	<2	<2	<2	<2	<2	<2
2-Butanone	2,600 (DD) dev	<25	<25	<25	<25	<25	<25	<25
Benzene	0.14 (M) ca*	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	9.9 nc	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NA	<1	<1	<1	<1	<1	<1	<1
Bromoform	NA	<1	<1	<1	<1	<1	<1	<1
Bromomethane	NA	<5	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	8.1 nc	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	1.9E-02 (M) nc	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	NA	<5	<5	<5	<5	<5	<5	<5
Carbon tetrachloride	NA	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	NA	<1	<1	<1	<1	<1	<1	<1
Chloroethane	NA	<5	<5	<5	<5	<5	<5	<5
Chloroform	NA	<1	<1	<1	<1	<1	<1	<1
Chloromethane	NA	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	0.66 (M) ca*	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NA	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	23 nc	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	7.5E-02 (M) ca	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	0.22 (M) nc*	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	0.19 (M) nc*	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	0.42 (M) ca*	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.36 (M) nc*	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	0.78 (MM) (M) mut*	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	NA	<5	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	13 nc	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	75 nc	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	3.0 nc	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NA	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	0.47 (M) ca*	<1	<1	<1	<1	<1	<1	<1
2-Hexanone	22 (M) nc*	<50	<50	<50	<50	<50	<50	<50
Hexachloroethane	NA	<5	<5	<5	<5	<5	<5	<5
p-Isopropyltoluene	NA	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	0.11 (M) ca*	<5	<5	<5	<5	<5	<5	<5
2-Methylnapthalene	2.5 (M) nc*	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-pentanone	720 (DD) dev	<50	<50	<50	<50	<50	<50	<50
tert-Methyl butyl ether (MTBE)	12 ca	<5	<5	<5	<5	<5	<5	<5
Methyl iodide	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	NA	<5	<5	<5	<5	<5	<5	<5
Napthalene	0.16 (M) ca*	<5	<5	<5	<5	<5	<5	<5
n-Propylbenzene	43 (DD) dev	<1	<1	<1	<1	<1	<1	<1
Styrene	2.7 ca	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	0.22 (M) ca*	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	180 (FF) st	<1	<1	<1	<1	<1	<1	<1
1,1,1,2,2-Tetrachloroethane	9.2E-02 (M) ca	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	2.2E-02 (M) nc	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	2.9 (M) nc*	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	3.7 (M) (JT) nc	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	0.20 (M) nc*	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	3.2 (JT) nc	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	3.0 (JT) nc	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	1.5 (FF) st	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	1,500 nc	<90	<90	<90	<90	<90	<90	<90
Toluene	300 (FF) st	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	7.3E-02 (M) (DD) dev	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	16 nc	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	5.1E-02 (MM) (M) mut	<1	<1	<1	<1	<1	<1	<1
o-Xylene	11 (J) nc	<1	<1	<1	<1	<1	<1	<1
p,m-Xylene	11 (J) nc	<2	<2	<2	<2	<2	<2	<2

Notes:
EPA Method 8260 used for analysis.
Analysis in µg/L

FIGURES



KEY MAP

Map Scale: 1:1,24,000;
Map Center: 83°41'9"W 43°5'51"N



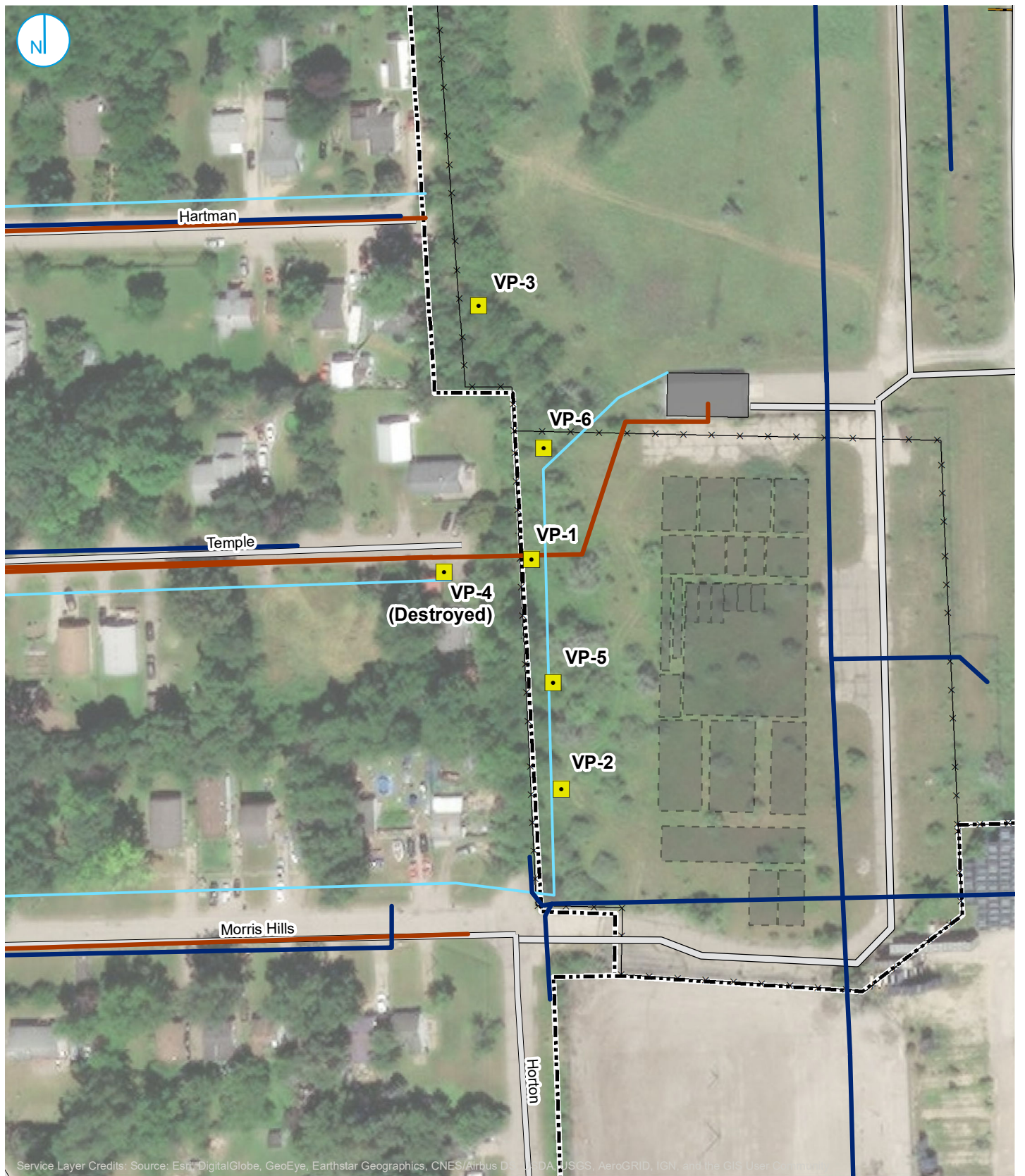
SITE LOCATION

FIGURE 01

O'BRIEN & GERE ENGINEERS, INC.
A RAMBOLL COMPANY







Racer Trust
Coldwater Road Landfill Facility
Flint, Michigan





Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus D... DA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

-  VAPOR POINT LOCATION
-  FORMER BUILDING
-  WATER LINE
-  SANITARY SEWER LINE
-  STORM SEWER LINE
-  PROPERTY BOUNDARY



VAPOR POINT LOCATIONS

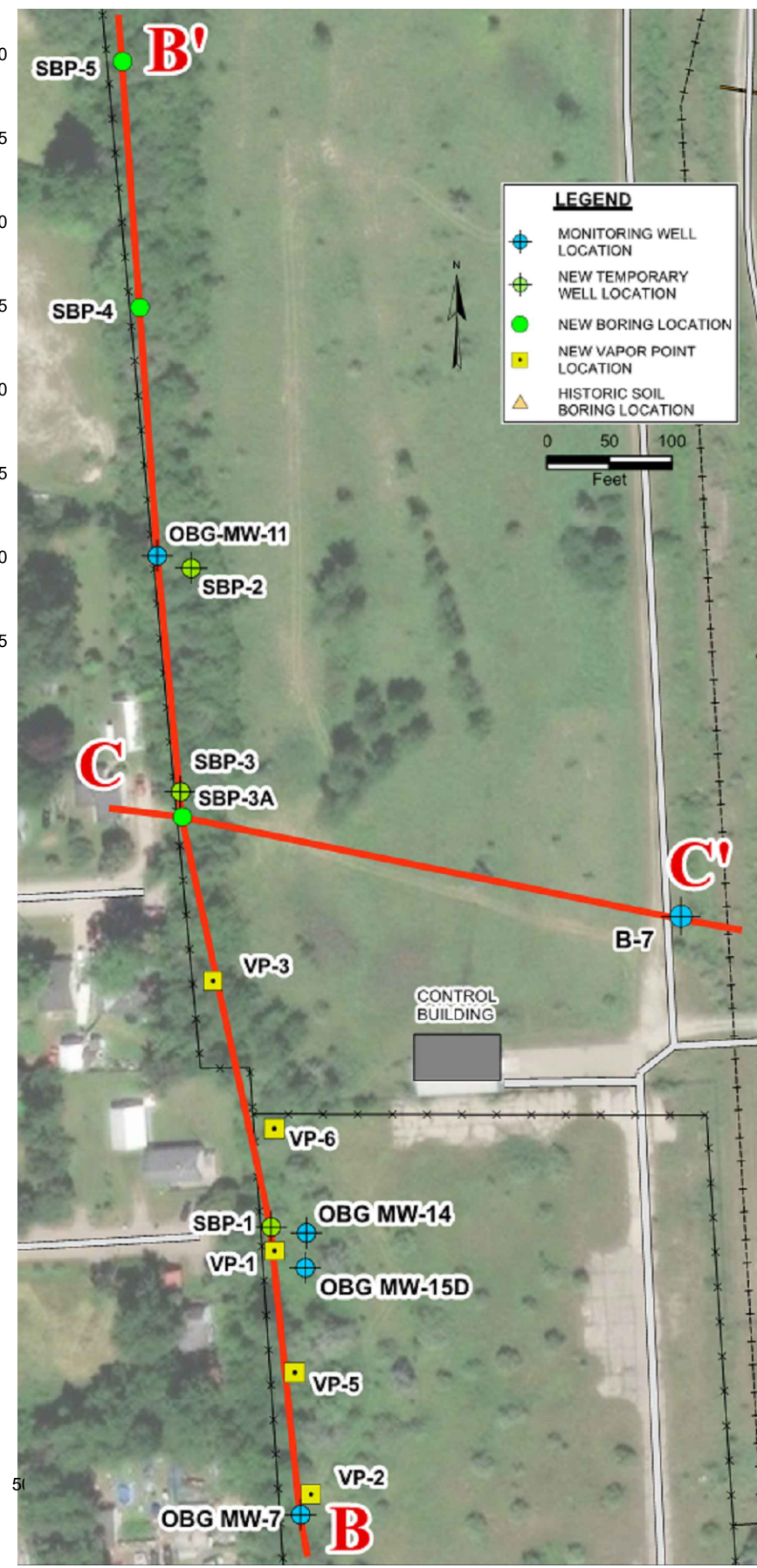
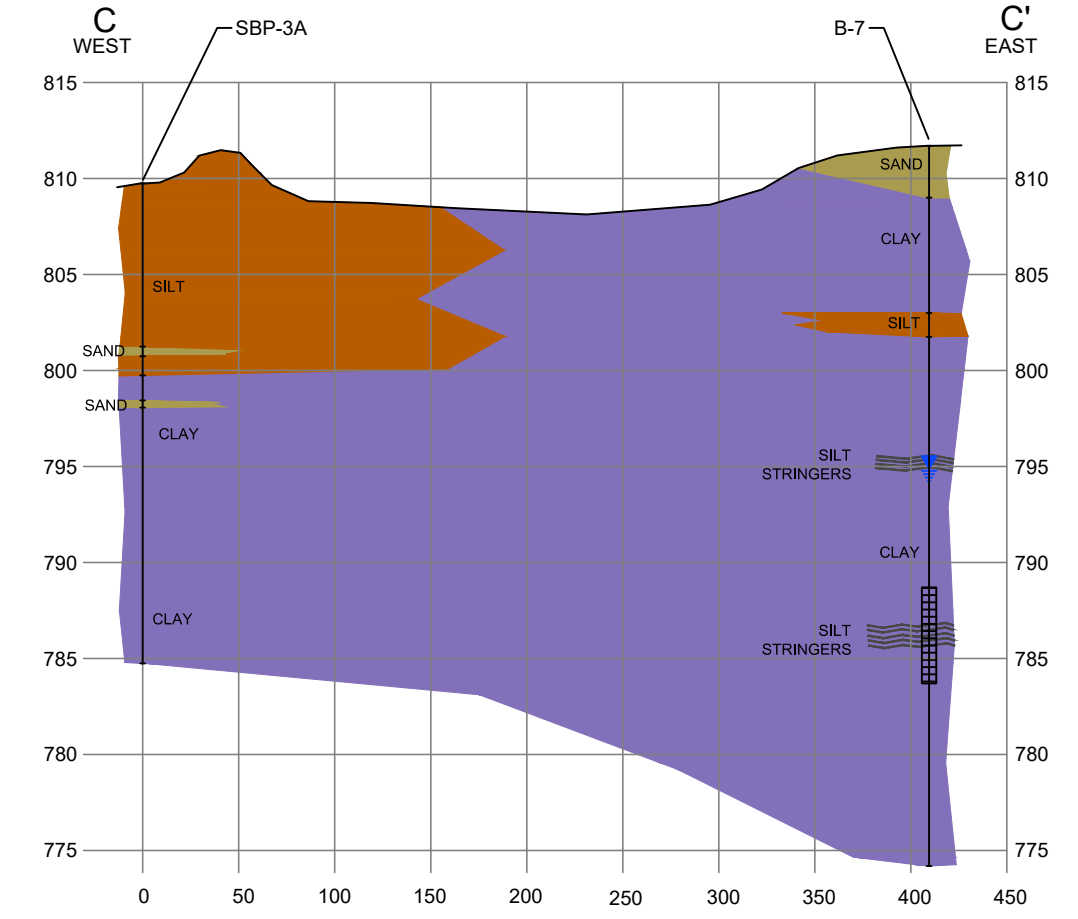
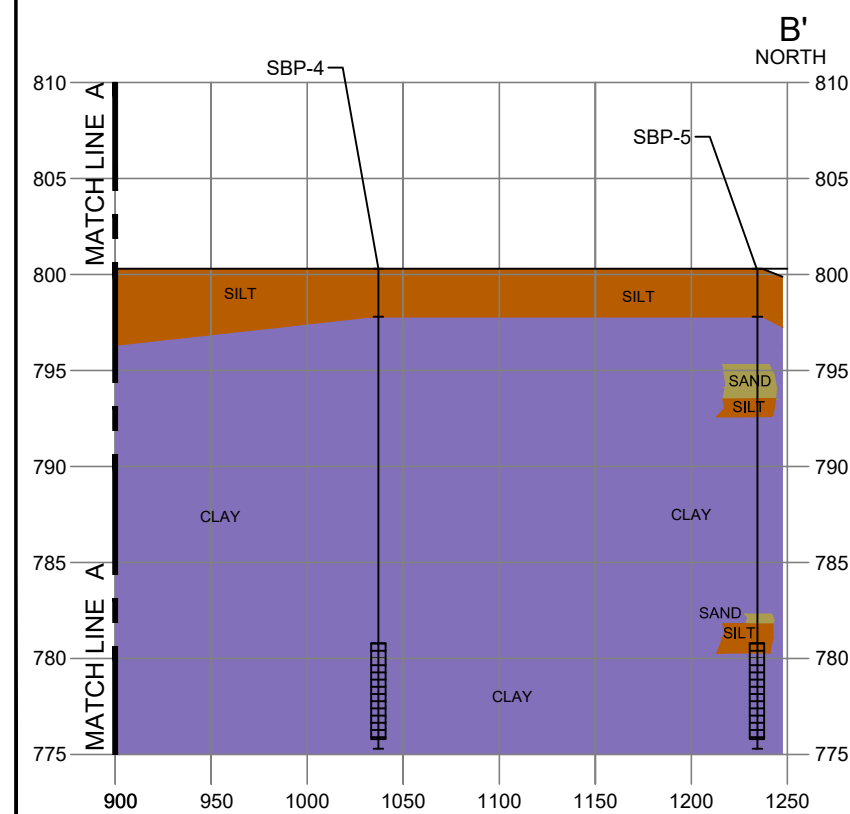
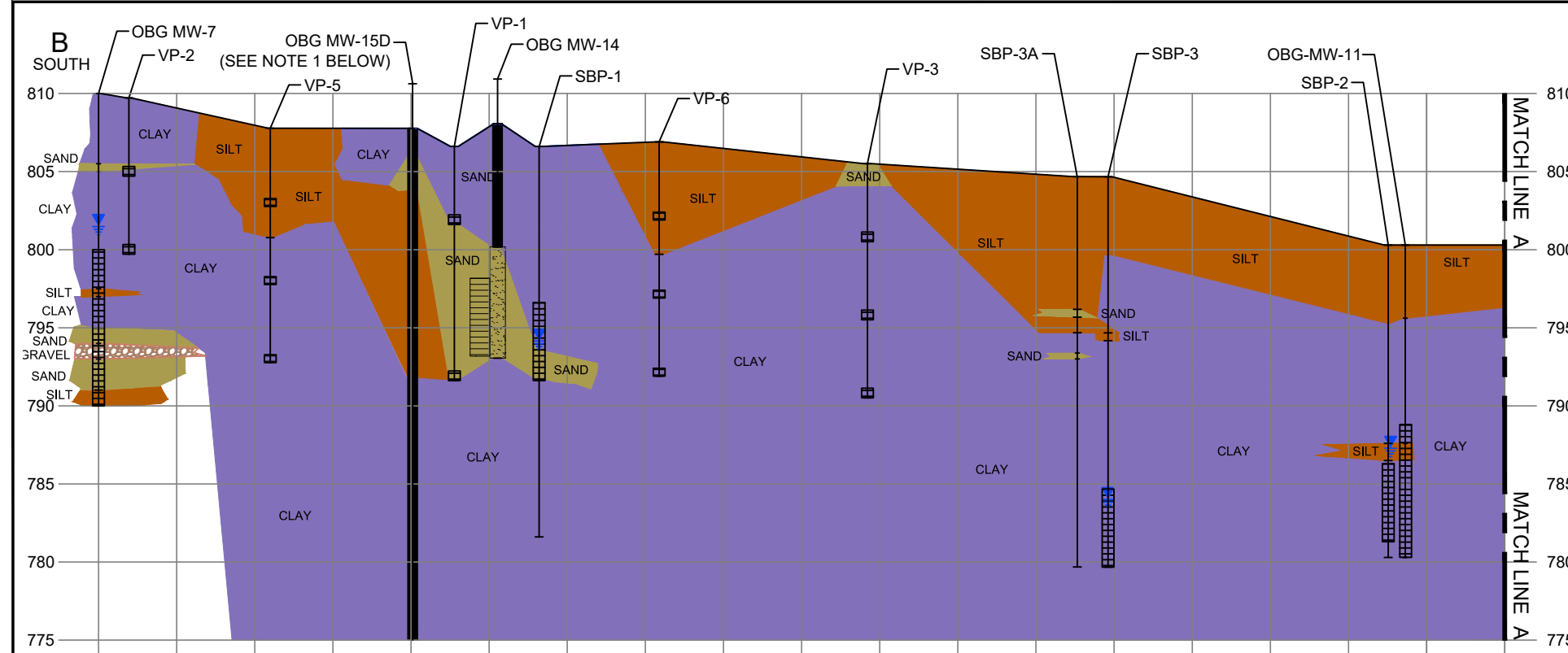
FIGURE 02

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RACER TRUST
COLDWATER ROAD
FLINT, MICHIGAN



Aug 08, 2019 3:31pm PLOTTED BY: JOHNSOSL SAVED BY: JOHNSOSL
 i:\Racer-Truett\15388\68545\Coldwater-Rd-LVM-D\Cross Sections\Figure 5 - Geologic Cross-Section B-B'-C-C'.dwg Layout1
 XREFS:



LEGEND

- MONITORING WELL LOCATION
- NEW TEMPORARY WELL LOCATION
- NEW BORING LOCATION
- NEW VAPOR POINT LOCATION
- HISTORIC SOIL BORING LOCATION

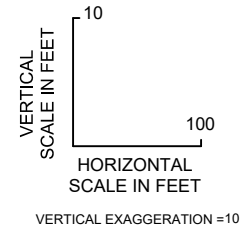
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CHECKED BY:	CSY	DATE:	01/16/2018
APPROVED BY:	CSY	DATE:	01/16/2018
DRAWING NO.:			
REFERENCE:			

GEOLOGIC CROSS-SECTION B-B'
GEOLOGIC CROSS-SECTION C-C'

RACER
 COLDWATER ROAD LANDFILL SITE
 FLINT, MICHIGAN



PROJECT NO.	68545
FIGURE NO.	03



NOTE:
 1. INFORMATION SHOWN BELOW 775 FT MSL IS NOT PROVIDED AS IT IS NOT PERTINENT TO THE VI STUDY.



APPENDIX A
Soil Vapor (Bottle Vac®)
Sample Collection Field Forms

Project # 1940100783 Date 8/26/21
 Project Name RALER Coldwater Rd Collector KBS

Sample ID	VP-15	VP-1D	Vacuum gauge "zero" ("Hg)
Start Date/Time	8/26 1220	1222	-2
End Date/Time	8/26 1232	1234	-30
Canister ID	28921	13750	-3
Flow controller ID	103	112	-2
Associated ambient air sample ID	N/A		10 minutes
Analytical method required	TO-15		5 fbg 10 fbg 15 fbg
			Laboratory used: Merit Laboratories

Tubing type used 1/4 I.D. 3/8 O.D. Length of tubing

S	M	D
8	13	18

 cm Tubing volume

S	M	D
77	125	173

 cc

Volume purged

S	M	D
231	375	519

 cc @ 0.1 l/min (100cc/min) 3 volumes purged @ < 200cc/min? Yes

Shroud tracer gas conc. Beginning: 25.6% End of purging: _____ End of sampling: 7.5%

Helium Short Circuiting Before:

S	M	D
0	0	0

 After:

S	M	D
0	0	0

 PID reading Before:

S	M	D
0	0	0

 (ppmv) After:

S	M	D
0	0	0

 (ppmv)

Gas Analyzer Readings %O₂ N/A %CO₂ N/A %CH₄ N/A
 Noticeable odor NO Soil type clayey

Weather Conditions during Probe Installation:
 Air temperature (°F) _____ Rainfall _____ Wind direction _____
 Barometric pressure _____ Wind speed (mph) _____
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: _____

Weather Conditions at Start of Sampling:
 Air temperature (°F) 84 Rainfall NO Wind direction N
 Barometric pressure 29.32 Wind speed (mph) 5
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:
Rain storm on 8/24/21 @ 20:00, 1.14 inches

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: VP-1D water in line collected water sample @ 12:32

Vapor VP-15 Water VP-1D



Soil Vapor (Bottle Vac®) Sample Collection Field Form

Project # 1940100783 Date 8/26/21
 Project Name RACER Coldwater Rd Collector KBS

Sample ID	VP-25	VP-2D	Vacuum gauge "zero" ("Hg)
Start Date/Time	8/26 1329	1330	0 0
End Date/Time	1340	1339	-26 -27
Canister ID	23682	35592	-26 -2
Flow controller ID	138	221	0 -2
Associated ambient air sample ID	N/A		10 minutes
Analytical method required	TO-15		5 fbg 10 fbg 15 fbg
			Merit Laboratories

Tubing type used 1/4 I.D. 3/8 O.D. Length of tubing

S	M	D
8	13	18

 cm Tubing volume

S	M	D
77	125	173

 cc

Volume purged

S	M	D
231	375	519

 cc @ 0.1 l/min (100cc/min) 3 volumes purged @ < 200cc/min? Yes

Shroud tracer gas conc. Beginning: 24.1 End of purging: _____ End of sampling: 9.7%

Helium Short Circuiting Before:

S	M	D
0	1	0

 After:

S	M	D
1	1	0

 PID reading Before:

S	M	D
0	1	0

 (ppmv) After:

S	M	D
1	1	0

 (ppmv)

Gas Analyzer Readings %O₂ N/A %CO₂ N/A %CH₄ N/A
 Noticeable odor _____ Soil type _____

Weather Conditions during Probe Installation:
 Air temperature (°F) _____ Rainfall _____ Wind direction _____
 Barometric pressure _____ Wind speed (mph) _____
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: _____

Weather Conditions at Start of Sampling:
 Air temperature (°F) 84 Rainfall No Wind direction WNW
 Barometric pressure 29.31 Wind speed (mph) 3 mph
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: _____

Rain storm on 8/24/21 @ 20:00, 1.14 inches

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: VP-25 water in line collected water 20:15 1350

Vapor VP-2D Water VP-25



Soil Vapor (Bottle Vac®) Sample Collection Field Form

Project # 1940100783 Date 8/26/21
Project Name RACER coldwater RD Collector KBS

Table with columns for Sample ID (VP-3S, VP-3M, VP-3D), Start/End Date/Time, Canister ID, Flow controller ID, Associated ambient air sample ID, Analytical method required, Vacuum gauge "zero" ("Hg), Start Pressure ("Hg), End Pressure ("Hg), End pressure > "zero"?, Sampling duration (intended), Depth of sample point, Laboratory used.

Tubing type used 1/4 I.D. 3/8 O.D. Length of tubing 8 13 18 cm Tubing volume 77 125 173 cc

Volume purged 231 375 519 cc @ 0.1 l/min (100cc/min) 3 volumes purged @ < 200cc/min? Yes
Shroud tracer gas conc. Beginning: 21.5% End of purging: End of sampling: 6.7%

Helium Short Circuiting Before: S M D After: S M D PID reading 0 0 0 (ppmv) After: S M D (ppmv)
Gas Analyzer Readings %O2 N/A %CO2 N/A %CH4 N/A
Noticeable odor NO Soil type loam

Weather Conditions during Probe Installation: Air temperature (°F) Rainfall Wind direction Wind speed (mph)
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Weather Conditions at Start of Sampling: Air temperature (°F) 82 Rainfall NO Wind direction NE Wind speed (mph) 5 mph
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: Rain storm on 8/24/21 @ 20:00, 1.4 inches

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: VP-3M water in line, attempted to collect water only 2 thirds full vapor
VP-3D no vapor sample collected, no water sample collected
attempted 8 hour sample, 2 PSI change over 8 hours

1057 VP-3D - 25.5 1700 - 25 1800 - 25
Vapor VP-3S Under

Project # 1940100783 Date 8/26/21
 Project Name RACER Coldwater Rd Collector KAS

Sample ID	VP-5S	VP-5M	VP-5D	Vacuum gauge "zero" ("Hg)	VP-5S	VP-5M	VP-5D
Start Date/Time	8/26 1430	1438	1441	Start Pressure ("Hg)	-30	-26	-28
End Date/Time	8/26 1440	1450	1449	End Pressure ("Hg)	-29	-2	-2
Canister ID	12432	34827	18327	End pressure > "zero"?	-2	0	0
Flow controller ID	032	220	240	Sampling duration (intended)	10 minutes		
Associated ambient air sample ID	N/A			Depth of sample point	5 fbg	10 fbg	15 fbg
Analytical method required	TO-15			Laboratory used	Merit Laboratories		

Tubing type used 1/4 I.D. 3/8 O.D. Length of tubing

S	M	D
8	13	18

 cm Tubing volume

S	M	D
77	125	173

 cc

Volume purged

S	M	D
231	375	519

 cc @ 0.1 l/min (100cc/min) 3 volumes purged @ < 200cc/min? Yes

Shroud tracer gas conc. Beginning: 8.7 End of purging: 0 End of sampling: 5.2%

Helium Short Circuiting Before:

S	M	D
0	0	0

 After:

S	M	D
/	0	0

 PID reading Before:

S	M	D
0	0	0

 (ppmv) After:

S	M	D
/	0	0

 (ppmv)

Gas Analyzer Readings %O₂ N/A %CO₂ N/A %CH₄ N/A

Noticeable odor _____ Soil type _____

Weather Conditions during Probe Installation:
 Air temperature (°F) _____ Rainfall _____ Wind direction _____
 Barometric pressure _____ Wind speed (mph) _____
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: _____

Weather Conditions at Start of Sampling:
 Air temperature (°F) 86 Rainfall NO Wind direction UPR
 Barometric pressure 29.32 Wind speed (mph) VAR 3
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:
Rain storm on 8/24/21 @ 20:00, 1.14 inches

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: VP-DUP-082621 collected @ VP-5M
VP-5S attempted to collect water sample via full vov - no sample
DUP canister 18341
VAPOR Water
VP-5D

Project # 1940100783 Date 8/26/21
 Project Name RACER Coldwater Rd Collector KBS

Sample ID	VP-6S	VP-6M	VP-6D	Vacuum gauge "zero" ("Hg)	VP-6S	VP-6M	VP-6D
Start Date/Time	8/26 922	924	926 / 1063	-2	-1	-3	0
End Date/Time	8/26 930	934	936 / 1803	-28	-29	-30	-26
Canister ID	18353	38956	12449 25396	-3	-26	-28	-22.5
Flow controller ID	236	126	46 / 1801	-2	-1	-3	
Associated ambient air sample ID	N/A			10 minutes			
Analytical method required	TO-15			5 fbg 10 fbg 15 fbg			
				Laboratory used: Merit Laboratories			

Tubing type used 1/4 I.D. 3/8 O.D. Length of tubing

S	M	D
8	13	18

 cm Tubing volume

S	M	D
77	125	173

 cc

Volume purged

S	M	D
231	375	519

 cc @ 0.1 l/min (100cc/min) 3 volumes purged @ < 200cc/min? Yes

Shroud tracer gas conc. Beginning: 35% End of purging: _____ End of sampling: 10%

Helium Short Circuiting Before:

S	M	D
0	0	0

 After:

S	M	D
0	1	1

 PID reading

S	M	D
0	0	0

 (ppmv) After:

S	M	D
0	1	1

 (ppmv)

Gas Analyzer Readings %O₂ N/A %CO₂ N/A %CH₄ N/A
 Noticeable odor No Soil type clayey

Weather Conditions during Probe Installation:
 Air temperature (°F) _____ Rainfall _____ Wind direction _____
 Barometric pressure _____ Wind speed (mph) _____
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs: _____

Weather Conditions at Start of Sampling:
 Air temperature (°F) 76 Rainfall NO Wind direction NNE
 Barometric pressure 29.32 Wind speed (mph) 5
 Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:
Rain storm on 8/24/21 @ 20:00, 1.14 inches

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: VP-6M water in line collected water sample 2 vials
VP-6D water in line attempted 8 hour no sample after 8 hours
no water collected

VP-6D
 1130 - 24
 1055 - 23
 1600 - 23
 1700 - 22.5
 1800 - 22.5
 Vapor sample
 VP-6S
 Water
 VP-6M



APPENDIX B
Analytical Laboratory Report



Analytical Laboratory Report

Report ID: S27616.01(01)
Generated on 09/03/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Additional Contacts: Kevin Schneider

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S27616.01-S27616.14
Project: RACER Coldwater Road
Collected Date(s): 08/26/2021
Submitted Date/Time: 08/27/2021 15:00
Sampled by: Kevin Schneider
P.O. #: 1940002628

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
N/A	Not Applicable
TO-15	EPA TO-15 Second Edition January 1999



Analytical Laboratory Report

Sample Summary (14 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S27616.01	VP-1S	Air	08/26/21 12:20 - 08/26/21 12:32
S27616.02	VP-1D	Air	08/26/21 12:22 - 08/26/21 12:34
S27616.03	VP-2S	Air	08/26/21 13:29 - 08/26/21 13:40
S27616.04	VP-2D	Air	08/26/21 13:30 - 08/26/21 13:39
S27616.05	VP-3S	Air	08/26/21 10:53 - 08/26/21 11:10
S27616.06	VP-3M	Air	08/26/21 10:55 - 08/26/21 11:12
S27616.07	VP-3D	Air	08/26/21 11:30 - 08/26/21 19:30
S27616.08	VP-5S	Air	08/26/21 14:30 - 08/26/21 14:40
S27616.09	VP-5M	Air	08/26/21 14:38 - 08/26/21 14:50
S27616.10	VP-5D	Air	08/26/21 14:41 - 08/26/21 14:49
S27616.11	VP-6S	Air	08/26/21 09:22 - 08/26/21 09:30
S27616.12	VP-6M	Air	08/26/21 09:24 - 08/26/21 09:34
S27616.13	VP-6D	Air	08/26/21 10:03 - 08/26/21 18:03
S27616.14	VP-DUP-082621	Air	08/26/21 00:01 - 08/26/21 00:02



Analytical Laboratory Report

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2.5	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	40	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	3	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	9	2		ppbv	10	109-99-9	
Toluene	4	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	75	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	15	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	27	5.9		ug/m3	10	109-99-9	
Toluene	15	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.02

Sample Tag: VP-1D

Collected Date/Time: 08/26/2021 12:22 - 08/26/2021 12:34

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.03

Sample Tag: VP-2S

Collected Date/Time: 08/26/2021 13:29 - 08/26/2021 13:40

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	20	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	20	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	7	2		ppbv	10	109-99-9	
Toluene	3	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	48	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	49	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	21	5.9		ug/m3	10	109-99-9	
Toluene	11	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	67	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	3	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	100	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	3	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	2	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	8	2		ppbv	10	109-99-9	
Toluene	7	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	4	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	130	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	11	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	250	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	15	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	9.3	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	24	5.9		ug/m3	10	109-99-9	
Toluene	26	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	17	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.06

Sample Tag: VP-3M

Collected Date/Time: 08/26/2021 10:55 - 08/26/2021 11:12

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.07

Sample Tag: VP-3D

Collected Date/Time: 08/26/2021 11:30 - 08/26/2021 19:30

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.08

Sample Tag: VP-5S

Collected Date/Time: 08/26/2021 14:30 - 08/26/2021 14:40

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	110	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	503	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	760	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	14	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	5	2		ppbv	10	109-99-9	
Toluene	3	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	260	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	948	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	1,900	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	73	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	15	5.9		ug/m3	10	109-99-9	
Toluene	11	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	86	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	4	2		ppbv	10	109-99-9	
Toluene	Not detected	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	160	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	12	5.9		ug/m3	10	109-99-9	
Toluene	Not detected	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2.5	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	20	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	28	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	3	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	3	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	5	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	9	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	5	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	3	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	11	2		ppbv	10	109-99-9	
Toluene	17	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	9	4		ppbv	10		
o-Xylene	4	2		ppbv	10	95-47-6	
Total Xylenes	13	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	48	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	89	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	10	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	13	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	20	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	32	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	25	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	14	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	32	5.9		ug/m3	10	109-99-9	
Toluene	64	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	39	17		ug/m3	10		
o-Xylene	17	8.7		ug/m3	10	95-47-6	
Total Xylenes	56	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.12

Sample Tag: VP-6M

Collected Date/Time: 08/26/2021 09:24 - 08/26/2021 09:34

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.13

Sample Tag: VP-6D

Collected Date/Time: 08/26/2021 10:03 - 08/26/2021 18:03

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	110	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	424	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	710	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	10	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	5	2		ppbv	10	109-99-9	
Toluene	2	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	260	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	799	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	1,700	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	30	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	15	5.9		ug/m3	10	109-99-9	
Toluene	7.5	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	

Merit Laboratories Login Checklist

Lab Set ID:S27616

Client:OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Submitted:08/27/2021 15:00 Login User: JRM

Attention: Clifford Yantz

Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Selection	Description	Note
Sample Receiving		
01.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # RT
02.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 2

A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: P.O. NO.: 19400026028 (task 10)
 EMAIL ADDRESS: Kevin.Schneider@Ramboll.com QUOTE NO.: Clifford.Yantz@Ramboll.com

CONTACT NAME: SAME
 COMPANY:
 ADDRESS:
 CITY: STATE: ZIP CODE:
 PHONE NO.: EMAIL ADDRESS:
 ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Road
 SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider *[Signature]*
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER
 DELIVERABLES REQUIRED: LEVEL II LEVEL III LEVEL IV EDD OTHER

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type				Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.01	VP-1S	8/26/21	1020	1232	-30	-3	103	28921			X			X	
.02	* VP-1D		1222	1234	-29	-27	112	13750			X			X	
.03	* VP-2S		1329	1340	-26	-26	138	23682			X			X	
.04	VP-2D		1330	1339	-27	-2	221	35592			X			X	
.05	VP-3S		1053	1110	-30	-2	5	27395			X			X	
.06	* VP-3M		1055	1112	-30	-30	9	13709			X			X	
.07	* VP-3D		1130	1930	-27	-25	802	18352			X			X	
.08	* VP-5S		1430	1440	-30	-29	232	12432			X			X	
.09	VP-5M		1438	1450	-26	-2	220	34827			X			X	
.10	VP-5D		1441	1449	-28	-2	240	18327			X			X	

Temperature (Fahrenheit)			Pressure (inches of Hg)		
Interior	Ambient	Notes	Interior	Ambient	Notes
Start	76		Start	29.32	
Stop	86		Stop	29.32	

Notes
 * No sample due to groundwater interference

RELINQUISHED BY: *[Signature]* DATE: 8/27/21 TIME: 9:57
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 9:50
 RELINQUISHED BY: *[Signature]* DATE: 8/27/21 TIME: 1500
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 1500

RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
 RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
 SEAL NO. SEAL INTACT YES NO INITIALS
 SEAL NO. SEAL INTACT YES NO INITIALS
 NOTES: TEMP. ON ARRIVAL _____
 RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Clifford Yantz / Kevin Schneider
 COMPANY Ramboll
 ADDRESS 2090 Commonwealth Blvd
 CITY Ann Arbor STATE MI ZIP CODE 48105
 PHONE NO. 313-333-0211 FAX NO. _____ P.O. NO. 1940002628 (task10)
 EMAIL ADDRESS Clifford.Yantz@Ramboll.com Kevin.Schneider@Ramboll.com QUOTE NO. 1940002628

CONTACT NAME SAME
 COMPANY _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP CODE _____
 PHONE NO. _____ EMAIL ADDRESS _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME Kevin Schneider *ZSK*
 TURNAROUND TIME REQUIRED 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Sample Type				Analyses		
									Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.11	VP-6S	8/26/21	922	930	-28	-3	236	18353			X			X	
.12	* VP-6M	↓	924	934	-29	-26	126	38956			X			X	
.13	* VP-6D		1003	1803	-26	-22.5	#801	25396			X			X	
.14	VP-DUP-082621		-	-	-26	-2	-	18341			X			X	
/															

Temperature (Fahrenheit)				Pressure (inches of Hg)			
Interior	Ambient	Notes	Interior	Ambient	Notes		
	76			29.32			
Start			Start				
	86			29.32			
Stop			Stop				

Notes
 * No Sample due to groundwater interference

RELINQUISHED BY: ZSK DATE 8/27/21 TIME _____
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 9:22
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 1500
 SIGNATURE/ORGANIZATION _____

RELINQUISHED BY: _____ DATE _____ TIME _____
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: _____ DATE _____ TIME _____
 SIGNATURE/ORGANIZATION _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL _____
RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Quality Control Report

Report ID: QC-S27616-01
Generated on 09/07/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S27616.01, S27616.04-S27616.05, S27616.09-S27616.11, S27616.14

Project: RACER Coldwater Road

Submitted Date/Time: 08/27/2021 15:00

Sampled by: Kevin Schneider

P.O. #: 1940002628

QC Report Sections

Cover Page (Page 1)

Analysis Summary (Pages 2-8)

Prep Batch Summary (Page 9)

Surrogates per Lab Sample (Pages 10-16)

Surrogates per QC Sample (Page 17)

Batch QC Results (Pages 18-22)

Report Flag Descriptions

*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 04:54	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 05:26	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 05:58	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 06:30	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 07:03	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 07:34	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 08:06	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: GV210902G1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27616.01	TO-15	TO-15	09/03/21 04:54	210902A8
S27616.04	TO-15	TO-15	09/03/21 05:26	210902A8
S27616.05	TO-15	TO-15	09/03/21 05:58	210902A8
S27616.09	TO-15	TO-15	09/03/21 06:30	210902A8
S27616.10	TO-15	TO-15	09/03/21 07:03	210902A8
S27616.11	TO-15	TO-15	09/03/21 07:34	210902A8
S27616.14	TO-15	TO-15	09/03/21 08:06	210902A8

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 04:54, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.8	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 05:26, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 05:58, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 06:30, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		69.2	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 07:03, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.2	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 07:34, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		71.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 08:06, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.4	60	140

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: GV210902G1

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		69.2	60	140

Laboratory Control Sample (LCS)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		84.2	60	140

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		82.4	60	140

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	2.00	ppbv
1,3-Butadiene		ND	2.00	ppbv
Benzene		ND	0.20	ppbv
Bromodichloromethane		ND	0.20	ppbv
Bromoform		ND	0.20	ppbv
Bromomethane		ND	0.20	ppbv
Vinyl bromide		ND	0.20	ppbv
Benzyl chloride		ND	0.20	ppbv
Carbon disulfide		ND	0.20	ppbv
Chlorobenzene		ND	0.20	ppbv
Chloroethane		ND	2.00	ppbv
Chloroform		ND	0.20	ppbv
Chloromethane		ND	2.00	ppbv
3-Chloropropene		ND	2.00	ppbv
2-Chlorotoluene		ND	0.20	ppbv
Carbon tetrachloride		ND	0.20	ppbv
Cyclohexane		ND	0.20	ppbv
1,1-Dichloroethane		ND	0.20	ppbv
1,1-Dichloroethene		ND	0.20	ppbv
1,2-Dibromoethane		ND	0.20	ppbv
1,2-Dichloroethane		ND	0.20	ppbv
1,2-Dichloropropane		ND	0.20	ppbv
1,4-Dioxane		ND	0.20	ppbv
Dichlorodifluoromethane		ND	0.20	ppbv
Dibromochloromethane		ND	0.20	ppbv
trans-1,2-Dichloroethene		ND	0.20	ppbv
cis-1,2-Dichloroethene		ND	0.20	ppbv
cis-1,3-Dichloropropene		ND	0.20	ppbv
1,3-Dichlorobenzene		ND	0.20	ppbv
1,2-Dichlorobenzene		ND	0.20	ppbv
1,4-Dichlorobenzene		ND	0.20	ppbv
trans-1,3-Dichloropropene		ND	0.20	ppbv
Ethanol		ND	2.00	ppbv
Ethylbenzene		ND	0.20	ppbv
Ethyl Acetate		ND	2.00	ppbv
4-Ethyltoluene		ND	0.20	ppbv
Freon 113		ND	0.20	ppbv
Freon 114		ND	0.20	ppbv
Heptane		ND	0.20	ppbv
Hexachlorobutadiene		ND	0.20	ppbv
Hexane		ND	0.20	ppbv
2-Hexanone		ND	0.20	ppbv
Isopropyl Alcohol		ND	2.00	ppbv
Methylene chloride		ND	0.20	ppbv
2-Butanone (MEK)		ND	2.00	ppbv
4-Methyl-2-pentanone (MIBK)		ND	0.20	ppbv

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	Conc	RDL	Units
tert-Methyl butyl ether (MTBE)		ND	0.20	ppbv
Methyl methacrylate		ND	0.20	ppbv
Naphthalene		ND	0.20	ppbv
Propylene		ND	2.00	ppbv
Styrene		ND	0.20	ppbv
1,1,1-Trichloroethane		ND	0.20	ppbv
1,1,2,2-Tetrachloroethane		ND	0.20	ppbv
1,1,2-Trichloroethane		ND	0.20	ppbv
1,2,4-Trichlorobenzene		ND	0.20	ppbv
1,2,4-Trimethylbenzene		ND	0.20	ppbv
1,3,5-Trimethylbenzene		ND	0.20	ppbv
2,2,4-Trimethylpentane		ND	0.20	ppbv
Tert-butyl Alcohol		ND	0.20	ppbv
Tetrachloroethene		ND	0.20	ppbv
Tetrahydrofuran		ND	0.20	ppbv
Toluene		ND	0.20	ppbv
Trichloroethene		ND	0.20	ppbv
Trichlorofluoromethane		ND	0.20	ppbv
Vinyl chloride		ND	0.20	ppbv
Vinyl acetate		ND	2.00	ppbv
p,m-Xylene		ND	0.20	ppbv
o-Xylene		ND	0.20	ppbv

Laboratory Control Sample (LCS)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone	*	131.3	70.0	130.0
1,3-Butadiene		123.1	70.0	130.0
Benzene		111.8	70.0	130.0
Bromodichloromethane		114.9	70.0	130.0
Bromoform		87.0	70.0	130.0
Bromomethane		109.9	70.0	130.0
Vinyl bromide		111.6	70.0	130.0
Benzyl chloride		72.2	70.0	130.0
Carbon disulfide		117.4	70.0	130.0
Chlorobenzene		95.2	70.0	130.0
Chloroethane		120.5	70.0	130.0
Chloroform		117.9	70.0	130.0
Chloromethane		125.1	70.0	130.0
3-Chloropropene		122.2	70.0	130.0
2-Chlorotoluene		93.9	70.0	130.0
Carbon tetrachloride		104.5	70.0	130.0
Cyclohexane		105.6	70.0	130.0
1,1-Dichloroethane		122.8	70.0	130.0
1,1-Dichloroethene		119.9	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,2-Dibromoethane		96.2	70.0	130.0
1,2-Dichloroethane		124.6	70.0	130.0
1,2-Dichloropropane		109.8	70.0	130.0
1,4-Dioxane		102.6	70.0	130.0
Dichlorodifluoromethane		118.9	70.0	130.0
Dibromochloromethane		96.3	70.0	130.0
trans-1,2-Dichloroethene		119.6	70.0	130.0
cis-1,2-Dichloroethene		114.5	70.0	130.0
cis-1,3-Dichloropropene		110.3	70.0	130.0
1,3-Dichlorobenzene		93.3	70.0	130.0
1,2-Dichlorobenzene		90.8	70.0	130.0
1,4-Dichlorobenzene		94.0	70.0	130.0
trans-1,3-Dichloropropene		108.5	70.0	130.0
Ethanol		125.1	70.0	130.0
Ethylbenzene		98.5	70.0	130.0
Ethyl Acetate		114.5	70.0	130.0
4-Ethyltoluene		101.0	70.0	130.0
Freon 113		110.3	70.0	130.0
Freon 114		115.2	70.0	130.0
Heptane		113.1	70.0	130.0
Hexachlorobutadiene		75.2	70.0	130.0
Hexane		111.7	70.0	130.0
2-Hexanone		114.3	70.0	130.0
Isopropyl Alcohol		125.4	70.0	130.0
Methylene chloride		110.6	70.0	130.0
2-Butanone (MEK)		118.7	70.0	130.0
4-Methyl-2-pentanone (MIBK)		115.5	70.0	130.0
tert-Methyl butyl ether (MTBE)		109.2	70.0	130.0
Methyl methacrylate		106.7	70.0	130.0
Naphthalene		81.1	70.0	130.0
Propylene		116.7	70.0	130.0
Styrene		97.7	70.0	130.0
1,1,1-Trichloroethane		114.3	70.0	130.0
1,1,2,2-Tetrachloroethane		101.1	70.0	130.0
1,1,2-Trichloroethane		113.6	70.0	130.0
1,2,4-Trichlorobenzene	*	68.1	70.0	130.0
1,2,4-Trimethylbenzene		97.6	70.0	130.0
1,3,5-Trimethylbenzene		92.4	70.0	130.0
2,2,4-Trimethylpentane		112.4	70.0	130.0
Tert-butyl Alcohol		104.1	70.0	130.0
Tetrachloroethene		86.0	70.0	130.0
Tetrahydrofuran		120.2	70.0	130.0
Toluene		107.0	70.0	130.0
Trichloroethene		108.0	70.0	130.0
Trichlorofluoromethane		125.7	70.0	130.0
Vinyl chloride		117.5	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Vinyl acetate		106.1	70.0	130.0
p,m-Xylene		94.8	70.0	130.0
o-Xylene		98.7	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone	*	130.6	70.0	130.0	0.5	30.0
1,3-Butadiene		99.8	70.0	130.0	20.9	30.0
Benzene		109.6	70.0	130.0	2.0	30.0
Bromodichloromethane		113.5	70.0	130.0	1.2	30.0
Bromoform		85.4	70.0	130.0	1.9	30.0
Bromomethane		92.6	70.0	130.0	17.1	30.0
Vinyl bromide		93.5	70.0	130.0	17.6	30.0
Benzyl chloride		74.7	70.0	130.0	3.4	30.0
Carbon disulfide		109.1	70.0	130.0	7.3	30.0
Chlorobenzene		93.0	70.0	130.0	2.3	30.0
Chloroethane		91.4	70.0	130.0	27.5	30.0
Chloroform		116.6	70.0	130.0	1.1	30.0
Chloromethane		123.1	70.0	130.0	1.6	30.0
3-Chloropropene		119.7	70.0	130.0	2.1	30.0
2-Chlorotoluene		90.9	70.0	130.0	3.2	30.0
Carbon tetrachloride		101.1	70.0	130.0	3.3	30.0
Cyclohexane		103.7	70.0	130.0	1.8	30.0
1,1-Dichloroethane		122.3	70.0	130.0	0.4	30.0
1,1-Dichloroethene		116.1	70.0	130.0	3.2	30.0
1,2-Dibromoethane		94.3	70.0	130.0	2.0	30.0
1,2-Dichloroethane		122.6	70.0	130.0	1.6	30.0
1,2-Dichloropropane		108.3	70.0	130.0	1.4	30.0
1,4-Dioxane		101.6	70.0	130.0	1.0	30.0
Dichlorodifluoromethane		112.4	70.0	130.0	5.6	30.0
Dibromochloromethane		94.1	70.0	130.0	2.3	30.0
trans-1,2-Dichloroethene		119.0	70.0	130.0	0.5	30.0
cis-1,2-Dichloroethene		111.5	70.0	130.0	2.7	30.0
cis-1,3-Dichloropropene		109.0	70.0	130.0	1.2	30.0
1,3-Dichlorobenzene		91.0	70.0	130.0	2.5	30.0
1,2-Dichlorobenzene		89.6	70.0	130.0	1.3	30.0
1,4-Dichlorobenzene		90.5	70.0	130.0	3.8	30.0
trans-1,3-Dichloropropene		108.5	70.0	130.0	0.0	30.0
Ethanol		119.3	70.0	130.0	4.7	30.0
Ethylbenzene		96.0	70.0	130.0	2.6	30.0
Ethyl Acetate		99.0	70.0	130.0	14.5	30.0
4-Ethyltoluene		98.1	70.0	130.0	2.9	30.0
Freon 113		105.9	70.0	130.0	4.1	30.0
Freon 114		113.8	70.0	130.0	1.2	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Heptane		111.7	70.0	130.0	1.2	30.0
Hexachlorobutadiene		74.6	70.0	130.0	0.8	30.0
Hexane		109.6	70.0	130.0	1.9	30.0
2-Hexanone		113.6	70.0	130.0	0.6	30.0
Isopropyl Alcohol		129.4	70.0	130.0	3.1	30.0
Methylene chloride		105.6	70.0	130.0	4.6	30.0
2-Butanone (MEK)		115.4	70.0	130.0	2.8	30.0
4-Methyl-2-pentanone (MIBK)		114.5	70.0	130.0	0.9	30.0
tert-Methyl butyl ether (MTBE)		107.7	70.0	130.0	1.4	30.0
Methyl methacrylate		107.4	70.0	130.0	0.7	30.0
Naphthalene		84.0	70.0	130.0	3.5	30.0
Propylene		115.8	70.0	130.0	0.8	30.0
Styrene		91.5	70.0	130.0	6.6	30.0
1,1,1-Trichloroethane		112.3	70.0	130.0	1.8	30.0
1,1,2,2-Tetrachloroethane		98.7	70.0	130.0	2.4	30.0
1,1,2-Trichloroethane		111.6	70.0	130.0	1.8	30.0
1,2,4-Trichlorobenzene	*	69.5	70.0	130.0	2.0	30.0
1,2,4-Trimethylbenzene		95.3	70.0	130.0	2.4	30.0
1,3,5-Trimethylbenzene		90.2	70.0	130.0	2.4	30.0
2,2,4-Trimethylpentane		109.4	70.0	130.0	2.7	30.0
Tert-butyl Alcohol		98.5	70.0	130.0	5.5	30.0
Tetrachloroethene		83.0	70.0	130.0	3.6	30.0
Tetrahydrofuran		118.3	70.0	130.0	1.6	30.0
Toluene		106.1	70.0	130.0	0.8	30.0
Trichloroethene		107.7	70.0	130.0	0.3	30.0
Trichlorofluoromethane		111.8	70.0	130.0	11.7	30.0
Vinyl chloride		128.2	70.0	130.0	8.7	30.0
Vinyl acetate		106.1	70.0	130.0	0.0	30.0
p,m-Xylene		92.3	70.0	130.0	2.7	30.0
o-Xylene		96.4	70.0	130.0	2.4	30.0



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
 www.meritlabs.com

C.O.C. PAGE # 1 OF 2

A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd
 CITY: Ann Arbor STATE: Mi ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: 19400026028 (task 10)
 EMAIL ADDRESS: Kevin.Schneider@Ramboll.com Clifford.Yantz@Ramboll.com QUOTE NO.: _____

CONTACT NAME: SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ EMAIL ADDRESS: _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider *[Signature]*
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Sample Type				Analyses		
									Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.01	VP-1S	8/26/21	1020	1032	-30	-3	103	28921			X			X	
.02	* VP-1D	↓	1022	1034	-29	-27	112	13750			X			X	
.03	* VP-2S		1329	1340	-26	-26	138	23682			X			X	
.04	VP-2D		1330	1339	-27	-2	221	35592			X			X	
.05	VP-3S		1053	1110	-30	-2	5	27395			X			X	
.06	* VP-3M		1055	1112	-30	-30	9	13709			X			X	
.07	* VP-3D		1130	1930	-27	-25	802	18352			X			X	
.08	* VP-5S		1430	1440	-30	-29	232	12432			X			X	
.09	VP-5M		1438	1450	-26	-2	220	34827			X			X	
.10	VP-5D		1441	1449	-28	-2	240	18327			X			X	

Temperature (Fahrenheit)			Pressure (inches of Hg)		
Interior	Ambient	Notes	Interior	Ambient	Notes
Start	76		Start	29.32	
Stop	86		Stop	29.32	

Notes
 * No sample due to groundwater interference

RELINQUISHED BY: *[Signature]* Sampler DATE: 8/27/21 TIME: _____
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 9
 RELINQUISHED BY: *[Signature]* DATE: 8/27/21 TIME: 1500
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 1500

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 SEAL NO. SEAL INTACT YES NO INITIALS _____
 NOTES: TEMP. ON ARRIVAL _____
RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-4034
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A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Clifford Yantz / Kevin Schneider
 COMPANY Ramboll
 ADDRESS 2090 Commonwealth Blvd
 CITY Ann Arbor STATE MI ZIP CODE 48105
 PHONE NO. 313-333-0211 FAX NO. _____ P.O. NO. 194002628 (task10)
 EMAIL ADDRESS Clifford.Yantz@Ramboll.com Kevin.Schneider@Ramboll.com QUOTE NO. 194002628

CONTACT NAME SAME
 COMPANY _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP CODE _____
 PHONE NO. _____ EMAIL ADDRESS _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME Kevin Schneider *ZSK*
 TURNAROUND TIME REQUIRED 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type					Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
		X			X	
		X			X	
		X			X	
		X			X	

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID
27616.11	VP-6S	8/26/21	922	930	-28	-3	236	18353
.12	* VP-6M	↓	924	934	-29	-26	126	38956
.13	* VP-6D		1003	1803	-26	-22.5	#801	25396
.14	VP-DUP-082621		-	-	-26	-2	-	18341
/								

Temperature (Fahrenheit)			Pressure (inches of Hg)		
Interior	Ambient	Notes	Interior	Ambient	Notes
	76			29.32	
	86			29.32	

Notes
 * No Sample due to groundwater interference

RELINQUISHED BY: ZSK DATE 8/27/21 TIME _____
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 9:22
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 1500
 SIGNATURE/ORGANIZATION _____

RELINQUISHED BY: _____ DATE _____ TIME _____
 SIGNATURE/ORGANIZATION _____
 RECEIVED BY: _____ DATE _____ TIME _____
 SIGNATURE/ORGANIZATION _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL _____
RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Analytical Laboratory Report

Report ID: S27616.01(01)
Generated on 09/03/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Additional Contacts: Kevin Schneider

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S27616.01-S27616.14
Project: RACER Coldwater Road
Collected Date(s): 08/26/2021
Submitted Date/Time: 08/27/2021 15:00
Sampled by: Kevin Schneider
P.O. #: 1940002628

Table of Contents

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- Method Summary (Page 4)
- Sample Summary (Page 5)

Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
N/A	Not Applicable
TO-15	EPA TO-15 Second Edition January 1999



Analytical Laboratory Report

Sample Summary (14 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S27616.01	VP-1S	Air	08/26/21 12:20 - 08/26/21 12:32
S27616.02	VP-1D	Air	08/26/21 12:22 - 08/26/21 12:34
S27616.03	VP-2S	Air	08/26/21 13:29 - 08/26/21 13:40
S27616.04	VP-2D	Air	08/26/21 13:30 - 08/26/21 13:39
S27616.05	VP-3S	Air	08/26/21 10:53 - 08/26/21 11:10
S27616.06	VP-3M	Air	08/26/21 10:55 - 08/26/21 11:12
S27616.07	VP-3D	Air	08/26/21 11:30 - 08/26/21 19:30
S27616.08	VP-5S	Air	08/26/21 14:30 - 08/26/21 14:40
S27616.09	VP-5M	Air	08/26/21 14:38 - 08/26/21 14:50
S27616.10	VP-5D	Air	08/26/21 14:41 - 08/26/21 14:49
S27616.11	VP-6S	Air	08/26/21 09:22 - 08/26/21 09:30
S27616.12	VP-6M	Air	08/26/21 09:24 - 08/26/21 09:34
S27616.13	VP-6D	Air	08/26/21 10:03 - 08/26/21 18:03
S27616.14	VP-DUP-082621	Air	08/26/21 00:01 - 08/26/21 00:02



Analytical Laboratory Report

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2.5	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	40	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	3	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	9	2		ppbv	10	109-99-9	
Toluene	4	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	75	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	15	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	27	5.9		ug/m3	10	109-99-9	
Toluene	15	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.01 (continued)

Sample Tag: VP-1S

TO-15, Method: TO-15, Run Date: 09/03/21 04:54, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.02

Sample Tag: VP-1D

Collected Date/Time: 08/26/2021 12:22 - 08/26/2021 12:34

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.03

Sample Tag: VP-2S

Collected Date/Time: 08/26/2021 13:29 - 08/26/2021 13:40

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	20	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	20	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	7	2		ppbv	10	109-99-9	
Toluene	3	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	48	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	49	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	21	5.9		ug/m3	10	109-99-9	
Toluene	11	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.04 (continued)

Sample Tag: VP-2D

TO-15, Method: TO-15, Run Date: 09/03/21 05:26, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	67	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	3	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	100	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	3	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	2	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	8	2		ppbv	10	109-99-9	
Toluene	7	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	4	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	130	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	11	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	250	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	15	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	9.3	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	24	5.9		ug/m3	10	109-99-9	
Toluene	26	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.05 (continued)

Sample Tag: VP-3S

TO-15, Method: TO-15, Run Date: 09/03/21 05:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	17	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.06

Sample Tag: VP-3M

Collected Date/Time: 08/26/2021 10:55 - 08/26/2021 11:12

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.07

Sample Tag: VP-3D

Collected Date/Time: 08/26/2021 11:30 - 08/26/2021 19:30

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.08

Sample Tag: VP-5S

Collected Date/Time: 08/26/2021 14:30 - 08/26/2021 14:40

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-3	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	110	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	503	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	760	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	14	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	5	2		ppbv	10	109-99-9	
Toluene	3	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	260	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	948	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	1,900	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	73	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	15	5.9		ug/m3	10	109-99-9	
Toluene	11	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.09 (continued)

Sample Tag: VP-5M

TO-15, Method: TO-15, Run Date: 09/03/21 06:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	86	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	4	2		ppbv	10	109-99-9	
Toluene	Not detected	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	Not detected	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	160	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	12	5.9		ug/m3	10	109-99-9	
Toluene	Not detected	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.10 (continued)

Sample Tag: VP-5D

TO-15, Method: TO-15, Run Date: 09/03/21 07:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2.5	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	20	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	28	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	3	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	Not detected	25		ppbv	10	64-17-5	
Ethylbenzene	3	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	5	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	9	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	50	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	5	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	3	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	Not detected	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	11	2		ppbv	10	109-99-9	
Toluene	17	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	9	4		ppbv	10		
o-Xylene	4	2		ppbv	10	95-47-6	
Total Xylenes	13	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	48	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	89	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	10	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	Not detected	47		ug/m3	10	64-17-5	
Ethylbenzene	13	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	20	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	32	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	120	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	25	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	14	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	Not detected	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	32	5.9		ug/m3	10	109-99-9	
Toluene	64	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.11 (continued)

Sample Tag: VP-6S

TO-15, Method: TO-15, Run Date: 09/03/21 07:34, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	39	17		ug/m3	10		
o-Xylene	17	8.7		ug/m3	10	95-47-6	
Total Xylenes	56	26		ug/m3	10	1330-20-7	



Analytical Laboratory Report

Lab Sample ID: S27616.12

Sample Tag: VP-6M

Collected Date/Time: 08/26/2021 09:24 - 08/26/2021 09:34

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.13

Sample Tag: VP-6D

Collected Date/Time: 08/26/2021 10:03 - 08/26/2021 18:03

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Other / Misc.

Method: , Run Date: 08/30/21 11:36, Analyst: SRS

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		



Analytical Laboratory Report

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Air Canister	None	No	RT	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Pressure check for TO-15*	-2	N/A	08/30/21 10:00	NDK	

Organics - Volatiles

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	110	20		ppbv	10	67-64-1	
1,3-Butadiene	Not detected	20		ppbv	10	106-99-0	
Benzene	Not detected	2		ppbv	10	71-43-2	
Bromodichloromethane	Not detected	2		ppbv	10	75-27-4	
Bromoform	Not detected	2		ppbv	10	75-25-2	
Bromomethane	Not detected	2		ppbv	10	74-83-9	
Vinyl bromide	Not detected	2		ppbv	10	593-60-2	
Benzyl chloride	Not detected	2		ppbv	10	100-44-7	
Carbon disulfide	Not detected	5		ppbv	10	75-15-0	
Chlorobenzene	Not detected	2		ppbv	10	108-90-7	
Chloroethane	Not detected	20		ppbv	10	75-00-3	
Chloroform	Not detected	2		ppbv	10	67-66-3	
Chloromethane	Not detected	20		ppbv	10	74-87-3	
3-Chloropropene	Not detected	20		ppbv	10	107-05-1	
2-Chlorotoluene	Not detected	2		ppbv	10	95-49-8	
Carbon tetrachloride	Not detected	2		ppbv	10	56-23-5	
Cyclohexane	Not detected	2		ppbv	10	110-82-7	
1,1-Dichloroethane	Not detected	2		ppbv	10	75-34-3	
1,1-Dichloroethene	Not detected	2		ppbv	10	75-35-4	
1,2-Dibromoethane	Not detected	2		ppbv	10	106-93-4	
1,2-Dichloroethane	Not detected	2		ppbv	10	107-06-2	
1,2-Dichloropropane	Not detected	2		ppbv	10	78-87-5	
1,4-Dioxane	Not detected	25		ppbv	10	123-91-1	
Dichlorodifluoromethane	Not detected	2		ppbv	10	75-71-8	
Dibromochloromethane	Not detected	2		ppbv	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	2		ppbv	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	2		ppbv	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	2		ppbv	10	541-73-1	
1,2-Dichlorobenzene	Not detected	2		ppbv	10	95-50-1	
1,4-Dichlorobenzene	Not detected	2		ppbv	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	2		ppbv	10	10061-02-6	
Ethanol*	424	25		ppbv	10	64-17-5	
Ethylbenzene	Not detected	2		ppbv	10	100-41-4	
Ethyl Acetate*	Not detected	20		ppbv	10	141-78-6	
4-Ethyltoluene	Not detected	2		ppbv	10	622-96-8	
Freon 113	Not detected	2		ppbv	10	76-13-1	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Freon 114	Not detected	2		ppbv	10	76-14-2	
Heptane	Not detected	2		ppbv	10	142-82-5	
Hexachlorobutadiene	Not detected	2		ppbv	10	87-68-3	
Hexane	Not detected	2		ppbv	10	110-54-3	
2-Hexanone*	Not detected	5		ppbv	10	591-78-6	
Isopropyl Alcohol*	710	20		ppbv	10	67-63-0	
Methylene chloride	Not detected	5		ppbv	10	75-09-2	
2-Butanone (MEK)	Not detected	20		ppbv	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	5		ppbv	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	2		ppbv	10	1634-04-4	
Methyl methacrylate	Not detected	2		ppbv	10	80-62-6	
Naphthalene	Not detected	2		ppbv	10	91-20-3	
Propylene*	Not detected	100		ppbv	10	115-07-1	
Styrene	Not detected	2		ppbv	10	100-42-5	
1,1,1-Trichloroethane	Not detected	2		ppbv	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	2		ppbv	10	79-34-5	
1,1,2-Trichloroethane	Not detected	2		ppbv	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	5		ppbv	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	2		ppbv	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	2		ppbv	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	2		ppbv	10	540-84-1	
Tert-butyl Alcohol	10	10		ppbv	10	75-65-0	
Tetrachloroethene	Not detected	2		ppbv	10	127-18-4	
Tetrahydrofuran*	5	2		ppbv	10	109-99-9	
Toluene	2	2		ppbv	10	108-88-3	
Trichloroethene	Not detected	2		ppbv	10	79-01-6	
Trichlorofluoromethane	Not detected	2		ppbv	10	75-69-4	
Vinyl chloride	Not detected	2		ppbv	10	75-01-4	
Vinyl acetate	Not detected	20		ppbv	10	108-05-4	
p,m-Xylene	Not detected	4		ppbv	10		
o-Xylene	Not detected	2		ppbv	10	95-47-6	
Total Xylenes	Not detected	6		ppbv	10	1330-20-7	

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acetone	260	48		ug/m3	10	67-64-1	
1,3-Butadiene	Not detected	44		ug/m3	10	106-99-0	
Benzene	Not detected	6.4		ug/m3	10	71-43-2	
Bromodichloromethane	Not detected	13		ug/m3	10	75-27-4	
Bromoform	Not detected	21		ug/m3	10	75-25-2	
Bromomethane	Not detected	7.8		ug/m3	10	74-83-9	
Vinyl bromide	Not detected	8.7		ug/m3	10	593-60-2	
Benzyl chloride	Not detected	10		ug/m3	10	100-44-7	
Carbon disulfide	Not detected	16		ug/m3	10	75-15-0	
Chlorobenzene	Not detected	9.2		ug/m3	10	108-90-7	
Chloroethane	Not detected	53		ug/m3	10	75-00-3	
Chloroform	Not detected	9.8		ug/m3	10	67-66-3	
Chloromethane	Not detected	41		ug/m3	10	74-87-3	
3-Chloropropene	Not detected	63		ug/m3	10	107-05-1	
2-Chlorotoluene	Not detected	10		ug/m3	10	95-49-8	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Carbon tetrachloride	Not detected	13		ug/m3	10	56-23-5	
Cyclohexane	Not detected	6.9		ug/m3	10	110-82-7	
1,1-Dichloroethane	Not detected	8.1		ug/m3	10	75-34-3	
1,1-Dichloroethene	Not detected	7.9		ug/m3	10	75-35-4	
1,2-Dibromoethane	Not detected	15		ug/m3	10	106-93-4	
1,2-Dichloroethane	Not detected	8.1		ug/m3	10	107-06-2	
1,2-Dichloropropane	Not detected	9.2		ug/m3	10	78-87-5	
1,4-Dioxane	Not detected	90		ug/m3	10	123-91-1	
Dichlorodifluoromethane	Not detected	9.9		ug/m3	10	75-71-8	
Dibromochloromethane	Not detected	17		ug/m3	10	124-48-1	
trans-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-60-5	
cis-1,2-Dichloroethene	Not detected	7.9		ug/m3	10	156-59-2	
cis-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-01-5	
1,3-Dichlorobenzene	Not detected	12		ug/m3	10	541-73-1	
1,2-Dichlorobenzene	Not detected	12		ug/m3	10	95-50-1	
1,4-Dichlorobenzene	Not detected	12		ug/m3	10	106-46-7	
trans-1,3-Dichloropropene	Not detected	9.1		ug/m3	10	10061-02-6	
Ethanol*	799	47		ug/m3	10	64-17-5	
Ethylbenzene	Not detected	8.7		ug/m3	10	100-41-4	
Ethyl Acetate*	Not detected	72		ug/m3	10	141-78-6	
4-Ethyltoluene	Not detected	9.8		ug/m3	10	622-96-8	
Freon 113	Not detected	15		ug/m3	10	76-13-1	
Freon 114	Not detected	14		ug/m3	10	76-14-2	
Heptane	Not detected	8.2		ug/m3	10	142-82-5	
Hexachlorobutadiene	Not detected	21		ug/m3	10	87-68-3	
Hexane	Not detected	7.0		ug/m3	10	110-54-3	
2-Hexanone*	Not detected	20		ug/m3	10	591-78-6	
Isopropyl Alcohol*	1,700	49		ug/m3	10	67-63-0	
Methylene chloride	Not detected	17		ug/m3	10	75-09-2	
2-Butanone (MEK)	Not detected	59		ug/m3	10	78-93-3	
4-Methyl-2-pentanone (MIBK)	Not detected	20		ug/m3	10	108-10-1	
tert-Methyl butyl ether (MTBE)	Not detected	7.2		ug/m3	10	1634-04-4	
Methyl methacrylate	Not detected	8.2		ug/m3	10	80-62-6	
Naphthalene	Not detected	10		ug/m3	10	91-20-3	
Propylene*	Not detected	170		ug/m3	10	115-07-1	
Styrene	Not detected	8.5		ug/m3	10	100-42-5	
1,1,1-Trichloroethane	Not detected	11		ug/m3	10	71-55-6	
1,1,2,2-Tetrachloroethane	Not detected	14		ug/m3	10	79-34-5	
1,1,2-Trichloroethane	Not detected	11		ug/m3	10	79-00-5	
1,2,4-Trichlorobenzene	Not detected	37		ug/m3	10	120-82-1	
1,2,4-Trimethylbenzene	Not detected	9.8		ug/m3	10	95-63-6	
1,3,5-Trimethylbenzene	Not detected	9.8		ug/m3	10	108-67-8	
2,2,4-Trimethylpentane	Not detected	9.3		ug/m3	10	540-84-1	
Tert-butyl Alcohol	30	30		ug/m3	10	75-65-0	
Tetrachloroethene	Not detected	14		ug/m3	10	127-18-4	
Tetrahydrofuran*	15	5.9		ug/m3	10	109-99-9	
Toluene	7.5	7.5		ug/m3	10	108-88-3	
Trichloroethene	Not detected	11		ug/m3	10	79-01-6	
Trichlorofluoromethane	Not detected	11		ug/m3	10	75-69-4	
Vinyl chloride	Not detected	5.1		ug/m3	10	75-01-4	



Analytical Laboratory Report

Lab Sample ID: S27616.14 (continued)

Sample Tag: VP-DUP-082621

TO-15, Method: TO-15, Run Date: 09/03/21 08:06, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl acetate	Not detected	70		ug/m3	10	108-05-4	
p,m-Xylene	Not detected	17		ug/m3	10		
o-Xylene	Not detected	8.7		ug/m3	10	95-47-6	
Total Xylenes	Not detected	26		ug/m3	10	1330-20-7	

Merit Laboratories Login Checklist

Lab Set ID:S27616

Client:OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Submitted:08/27/2021 15:00 Login User: JRM

Attention: Clifford Yantz

Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@ramboll.com

Selection	Description	Note
Sample Receiving		
01.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # RT
02.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



2680 East Lansing Dr., East Lansing, MI 48823
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 www.meritlabs.com

C.O.C. PAGE # 1 OF 2

A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: P.O. NO.: 19400026028 (task 10)
 EMAIL ADDRESS: Kevin.Schneider@Ramboll.com Clifford.Yantz@Ramboll.com
 QUOTE NO.:

CONTACT NAME: SAME
 COMPANY:
 ADDRESS:
 CITY: STATE: ZIP CODE:
 PHONE NO.: EMAIL ADDRESS:

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Road
 SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider *K SK*
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER
 DELIVERABLES REQUIRED: LEVEL II LEVEL III LEVEL IV EDD OTHER

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type					Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.01	VP-1S	8/26/21	1020	1232	-30	-3	103	28921			X			X	
.02	* VP-1D		1222	1234	-29	-27	112	13750			X			X	
.03	* VP-2S		1329	1340	-26	-26	138	23682			X			X	
.04	VP-2D		1330	1339	-27	-2	221	35592			X			X	
.05	VP-3S		1053	1110	-30	-2	5	27395			X			X	
.06	* VP-3M		1055	1112	-30	-30	9	13709			X			X	
.07	* VP-3D		1130	1930	-27	-25	802	18352			X			X	
.08	* VP-5S		1430	1440	-30	-29	232	12432			X			X	
.09	VP-5M		1438	1450	-26	-2	220	34827			X			X	
.10	VP-5D		1441	1449	-28	-2	240	18327			X			X	

Temperature (Fahrenheit)			Pressure (inches of Hg)		
Interior	Ambient	Notes	Interior	Ambient	Notes
Start	76		Start	29.32	
Stop	86		Stop	29.32	

Notes
 * No sample due to groundwater interference

RELINQUISHED BY: *K SK* Sampler DATE: 8/27/21 TIME: 9:50
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 9:50
 RELINQUISHED BY: *[Signature]* DATE: 8/27/21 TIME: 1500
 RECEIVED BY: *[Signature]* DATE: 8/27/21 TIME: 1500

RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
 RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
 SEAL NO. SEAL INTACT YES NO INITIALS
 SEAL NO. SEAL INTACT YES NO INITIALS
 NOTES: TEMP. ON ARRIVAL _____
 RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: 194002628 (task10)
 EMAIL ADDRESS: Clifford.Yantz@ramboll.com Kevin.Schneider@ramboll.com QUOTE NO.: 194002628

CONTACT NAME: SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ EMAIL ADDRESS: _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider *ZSK*
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type				Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	TO-15	Other (specify in notes)

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.11	VP-6S	8/26/21	922	930	-28	-3	236	18353			X			X	
.12	* VP-6M	↓	924	934	-29	-26	126	38956			X			X	
.13	* VP-6D		1003	1803	-26	-22.5	#801	25396			X			X	
.14	VP-DUP-082621		-	-	-26	-2	-	18341			X			X	
/															

Temperature (Fahrenheit)				Pressure (inches of Hg)			
Interior	Ambient	Notes	Interior	Ambient	Notes		
Start	76		Start	29.32			
Stop	86		Stop	29.32			

Notes
 * No Sample due to groundwater interference

RELINQUISHED BY: ZSK DATE: 8/27/21 TIME: _____
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: [Signature] DATE: 8/27/21 TIME: 9:22
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: [Signature] DATE: 8/27/21 TIME: 1500
 SIGNATURE/ORGANIZATION: Johanna Chung

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SIGNATURE/ORGANIZATION: _____
 SEAL NO.: _____ SEAL INTACT: YES NO INITIALS: _____
 SEAL NO.: _____ SEAL INTACT: YES NO INITIALS: _____
 NOTES: _____ TEMP. ON ARRIVAL: RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



Quality Control Report

Report ID: QC-S27616-01
Generated on 09/07/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S27616.01, S27616.04-S27616.05, S27616.09-S27616.11, S27616.14

Project: RACER Coldwater Road

Submitted Date/Time: 08/27/2021 15:00

Sampled by: Kevin Schneider

P.O. #: 1940002628

QC Report Sections

- Cover Page (Page 1)
- Analysis Summary (Pages 2-8)
- Prep Batch Summary (Page 9)
- Surrogates per Lab Sample (Pages 10-16)
- Surrogates per QC Sample (Page 17)
- Batch QC Results (Pages 18-22)

Report Flag Descriptions

- *: QC result is outside of indicated control limits
- W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 04:54	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 05:26	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 05:58	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 06:30	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 07:03	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 07:34	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
TO-15	TO-15	09/03/21 08:06	210902A8	GV210902G1	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: GV210902G1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27616.01	TO-15	TO-15	09/03/21 04:54	210902A8
S27616.04	TO-15	TO-15	09/03/21 05:26	210902A8
S27616.05	TO-15	TO-15	09/03/21 05:58	210902A8
S27616.09	TO-15	TO-15	09/03/21 06:30	210902A8
S27616.10	TO-15	TO-15	09/03/21 07:03	210902A8
S27616.11	TO-15	TO-15	09/03/21 07:34	210902A8
S27616.14	TO-15	TO-15	09/03/21 08:06	210902A8

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.01

Sample Tag: VP-1S

Collected Date/Time: 08/26/2021 12:20 - 08/26/2021 12:32

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 04:54, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.8	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.04

Sample Tag: VP-2D

Collected Date/Time: 08/26/2021 13:30 - 08/26/2021 13:39

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 05:26, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.05

Sample Tag: VP-3S

Collected Date/Time: 08/26/2021 10:53 - 08/26/2021 11:10

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 05:58, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.09

Sample Tag: VP-5M

Collected Date/Time: 08/26/2021 14:38 - 08/26/2021 14:50

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 06:30, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		69.2	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.10

Sample Tag: VP-5D

Collected Date/Time: 08/26/2021 14:41 - 08/26/2021 14:49

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 07:03, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.2	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.11

Sample Tag: VP-6S

Collected Date/Time: 08/26/2021 09:22 - 08/26/2021 09:30

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 07:34, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		71.1	60	140

QC Report - Surrogates per Lab Sample

Lab Sample ID: S27616.14

Sample Tag: VP-DUP-082621

Collected Date/Time: 08/26/2021 00:01 - 08/26/2021 00:02

Matrix: Air

COC Reference:

Organics - Volatiles, Analysis: TO-15

Run in Batch: 210902A8, Run Date: 09/03/2021 08:06, Matrix: G, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		68.4	60	140

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: GV210902G1

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		69.2	60	140

Laboratory Control Sample (LCS)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		84.2	60	140

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		82.4	60	140

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Acetone		ND	2.00	ppbv
1,3-Butadiene		ND	2.00	ppbv
Benzene		ND	0.20	ppbv
Bromodichloromethane		ND	0.20	ppbv
Bromoform		ND	0.20	ppbv
Bromomethane		ND	0.20	ppbv
Vinyl bromide		ND	0.20	ppbv
Benzyl chloride		ND	0.20	ppbv
Carbon disulfide		ND	0.20	ppbv
Chlorobenzene		ND	0.20	ppbv
Chloroethane		ND	2.00	ppbv
Chloroform		ND	0.20	ppbv
Chloromethane		ND	2.00	ppbv
3-Chloropropene		ND	2.00	ppbv
2-Chlorotoluene		ND	0.20	ppbv
Carbon tetrachloride		ND	0.20	ppbv
Cyclohexane		ND	0.20	ppbv
1,1-Dichloroethane		ND	0.20	ppbv
1,1-Dichloroethene		ND	0.20	ppbv
1,2-Dibromoethane		ND	0.20	ppbv
1,2-Dichloroethane		ND	0.20	ppbv
1,2-Dichloropropane		ND	0.20	ppbv
1,4-Dioxane		ND	0.20	ppbv
Dichlorodifluoromethane		ND	0.20	ppbv
Dibromochloromethane		ND	0.20	ppbv
trans-1,2-Dichloroethene		ND	0.20	ppbv
cis-1,2-Dichloroethene		ND	0.20	ppbv
cis-1,3-Dichloropropene		ND	0.20	ppbv
1,3-Dichlorobenzene		ND	0.20	ppbv
1,2-Dichlorobenzene		ND	0.20	ppbv
1,4-Dichlorobenzene		ND	0.20	ppbv
trans-1,3-Dichloropropene		ND	0.20	ppbv
Ethanol		ND	2.00	ppbv
Ethylbenzene		ND	0.20	ppbv
Ethyl Acetate		ND	2.00	ppbv
4-Ethyltoluene		ND	0.20	ppbv
Freon 113		ND	0.20	ppbv
Freon 114		ND	0.20	ppbv
Heptane		ND	0.20	ppbv
Hexachlorobutadiene		ND	0.20	ppbv
Hexane		ND	0.20	ppbv
2-Hexanone		ND	0.20	ppbv
Isopropyl Alcohol		ND	2.00	ppbv
Methylene chloride		ND	0.20	ppbv
2-Butanone (MEK)		ND	2.00	ppbv
4-Methyl-2-pentanone (MIBK)		ND	0.20	ppbv

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 210902A8.BLKG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 21:19, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	Conc	RDL	Units
tert-Methyl butyl ether (MTBE)		ND	0.20	ppbv
Methyl methacrylate		ND	0.20	ppbv
Naphthalene		ND	0.20	ppbv
Propylene		ND	2.00	ppbv
Styrene		ND	0.20	ppbv
1,1,1-Trichloroethane		ND	0.20	ppbv
1,1,2,2-Tetrachloroethane		ND	0.20	ppbv
1,1,2-Trichloroethane		ND	0.20	ppbv
1,2,4-Trichlorobenzene		ND	0.20	ppbv
1,2,4-Trimethylbenzene		ND	0.20	ppbv
1,3,5-Trimethylbenzene		ND	0.20	ppbv
2,2,4-Trimethylpentane		ND	0.20	ppbv
Tert-butyl Alcohol		ND	0.20	ppbv
Tetrachloroethene		ND	0.20	ppbv
Tetrahydrofuran		ND	0.20	ppbv
Toluene		ND	0.20	ppbv
Trichloroethene		ND	0.20	ppbv
Trichlorofluoromethane		ND	0.20	ppbv
Vinyl chloride		ND	0.20	ppbv
Vinyl acetate		ND	2.00	ppbv
p,m-Xylene		ND	0.20	ppbv
o-Xylene		ND	0.20	ppbv

Laboratory Control Sample (LCS)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Acetone	*	131.3	70.0	130.0
1,3-Butadiene		123.1	70.0	130.0
Benzene		111.8	70.0	130.0
Bromodichloromethane		114.9	70.0	130.0
Bromoform		87.0	70.0	130.0
Bromomethane		109.9	70.0	130.0
Vinyl bromide		111.6	70.0	130.0
Benzyl chloride		72.2	70.0	130.0
Carbon disulfide		117.4	70.0	130.0
Chlorobenzene		95.2	70.0	130.0
Chloroethane		120.5	70.0	130.0
Chloroform		117.9	70.0	130.0
Chloromethane		125.1	70.0	130.0
3-Chloropropene		122.2	70.0	130.0
2-Chlorotoluene		93.9	70.0	130.0
Carbon tetrachloride		104.5	70.0	130.0
Cyclohexane		105.6	70.0	130.0
1,1-Dichloroethane		122.8	70.0	130.0
1,1-Dichloroethene		119.9	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
1,2-Dibromoethane		96.2	70.0	130.0
1,2-Dichloroethane		124.6	70.0	130.0
1,2-Dichloropropane		109.8	70.0	130.0
1,4-Dioxane		102.6	70.0	130.0
Dichlorodifluoromethane		118.9	70.0	130.0
Dibromochloromethane		96.3	70.0	130.0
trans-1,2-Dichloroethene		119.6	70.0	130.0
cis-1,2-Dichloroethene		114.5	70.0	130.0
cis-1,3-Dichloropropene		110.3	70.0	130.0
1,3-Dichlorobenzene		93.3	70.0	130.0
1,2-Dichlorobenzene		90.8	70.0	130.0
1,4-Dichlorobenzene		94.0	70.0	130.0
trans-1,3-Dichloropropene		108.5	70.0	130.0
Ethanol		125.1	70.0	130.0
Ethylbenzene		98.5	70.0	130.0
Ethyl Acetate		114.5	70.0	130.0
4-Ethyltoluene		101.0	70.0	130.0
Freon 113		110.3	70.0	130.0
Freon 114		115.2	70.0	130.0
Heptane		113.1	70.0	130.0
Hexachlorobutadiene		75.2	70.0	130.0
Hexane		111.7	70.0	130.0
2-Hexanone		114.3	70.0	130.0
Isopropyl Alcohol		125.4	70.0	130.0
Methylene chloride		110.6	70.0	130.0
2-Butanone (MEK)		118.7	70.0	130.0
4-Methyl-2-pentanone (MIBK)		115.5	70.0	130.0
tert-Methyl butyl ether (MTBE)		109.2	70.0	130.0
Methyl methacrylate		106.7	70.0	130.0
Naphthalene		81.1	70.0	130.0
Propylene		116.7	70.0	130.0
Styrene		97.7	70.0	130.0
1,1,1-Trichloroethane		114.3	70.0	130.0
1,1,2,2-Tetrachloroethane		101.1	70.0	130.0
1,1,2-Trichloroethane		113.6	70.0	130.0
1,2,4-Trichlorobenzene	*	68.1	70.0	130.0
1,2,4-Trimethylbenzene		97.6	70.0	130.0
1,3,5-Trimethylbenzene		92.4	70.0	130.0
2,2,4-Trimethylpentane		112.4	70.0	130.0
Tert-butyl Alcohol		104.1	70.0	130.0
Tetrachloroethene		86.0	70.0	130.0
Tetrahydrofuran		120.2	70.0	130.0
Toluene		107.0	70.0	130.0
Trichloroethene		108.0	70.0	130.0
Trichlorofluoromethane		125.7	70.0	130.0
Vinyl chloride		117.5	70.0	130.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:13, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Vinyl acetate		106.1	70.0	130.0
p,m-Xylene		94.8	70.0	130.0
o-Xylene		98.7	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Acetone	*	130.6	70.0	130.0	0.5	30.0
1,3-Butadiene		99.8	70.0	130.0	20.9	30.0
Benzene		109.6	70.0	130.0	2.0	30.0
Bromodichloromethane		113.5	70.0	130.0	1.2	30.0
Bromoform		85.4	70.0	130.0	1.9	30.0
Bromomethane		92.6	70.0	130.0	17.1	30.0
Vinyl bromide		93.5	70.0	130.0	17.6	30.0
Benzyl chloride		74.7	70.0	130.0	3.4	30.0
Carbon disulfide		109.1	70.0	130.0	7.3	30.0
Chlorobenzene		93.0	70.0	130.0	2.3	30.0
Chloroethane		91.4	70.0	130.0	27.5	30.0
Chloroform		116.6	70.0	130.0	1.1	30.0
Chloromethane		123.1	70.0	130.0	1.6	30.0
3-Chloropropene		119.7	70.0	130.0	2.1	30.0
2-Chlorotoluene		90.9	70.0	130.0	3.2	30.0
Carbon tetrachloride		101.1	70.0	130.0	3.3	30.0
Cyclohexane		103.7	70.0	130.0	1.8	30.0
1,1-Dichloroethane		122.3	70.0	130.0	0.4	30.0
1,1-Dichloroethene		116.1	70.0	130.0	3.2	30.0
1,2-Dibromoethane		94.3	70.0	130.0	2.0	30.0
1,2-Dichloroethane		122.6	70.0	130.0	1.6	30.0
1,2-Dichloropropane		108.3	70.0	130.0	1.4	30.0
1,4-Dioxane		101.6	70.0	130.0	1.0	30.0
Dichlorodifluoromethane		112.4	70.0	130.0	5.6	30.0
Dibromochloromethane		94.1	70.0	130.0	2.3	30.0
trans-1,2-Dichloroethene		119.0	70.0	130.0	0.5	30.0
cis-1,2-Dichloroethene		111.5	70.0	130.0	2.7	30.0
cis-1,3-Dichloropropene		109.0	70.0	130.0	1.2	30.0
1,3-Dichlorobenzene		91.0	70.0	130.0	2.5	30.0
1,2-Dichlorobenzene		89.6	70.0	130.0	1.3	30.0
1,4-Dichlorobenzene		90.5	70.0	130.0	3.8	30.0
trans-1,3-Dichloropropene		108.5	70.0	130.0	0.0	30.0
Ethanol		119.3	70.0	130.0	4.7	30.0
Ethylbenzene		96.0	70.0	130.0	2.6	30.0
Ethyl Acetate		99.0	70.0	130.0	14.5	30.0
4-Ethyltoluene		98.1	70.0	130.0	2.9	30.0
Freon 113		105.9	70.0	130.0	4.1	30.0
Freon 114		113.8	70.0	130.0	1.2	30.0

QC Report - Batch QC Results

Organics - Volatiles, Prep Batch ID: GV210902G1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 210902A8.LCSDG02A, Parent Sample ID: 210902A8.LCSG02A

Run in Batch: 210902A8, Run Date: 09/02/2021 20:46, Prep Date: 09/02/2021, Matrix: G, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Heptane		111.7	70.0	130.0	1.2	30.0
Hexachlorobutadiene		74.6	70.0	130.0	0.8	30.0
Hexane		109.6	70.0	130.0	1.9	30.0
2-Hexanone		113.6	70.0	130.0	0.6	30.0
Isopropyl Alcohol		129.4	70.0	130.0	3.1	30.0
Methylene chloride		105.6	70.0	130.0	4.6	30.0
2-Butanone (MEK)		115.4	70.0	130.0	2.8	30.0
4-Methyl-2-pentanone (MIBK)		114.5	70.0	130.0	0.9	30.0
tert-Methyl butyl ether (MTBE)		107.7	70.0	130.0	1.4	30.0
Methyl methacrylate		107.4	70.0	130.0	0.7	30.0
Naphthalene		84.0	70.0	130.0	3.5	30.0
Propylene		115.8	70.0	130.0	0.8	30.0
Styrene		91.5	70.0	130.0	6.6	30.0
1,1,1-Trichloroethane		112.3	70.0	130.0	1.8	30.0
1,1,2,2-Tetrachloroethane		98.7	70.0	130.0	2.4	30.0
1,1,2-Trichloroethane		111.6	70.0	130.0	1.8	30.0
1,2,4-Trichlorobenzene	*	69.5	70.0	130.0	2.0	30.0
1,2,4-Trimethylbenzene		95.3	70.0	130.0	2.4	30.0
1,3,5-Trimethylbenzene		90.2	70.0	130.0	2.4	30.0
2,2,4-Trimethylpentane		109.4	70.0	130.0	2.7	30.0
Tert-butyl Alcohol		98.5	70.0	130.0	5.5	30.0
Tetrachloroethene		83.0	70.0	130.0	3.6	30.0
Tetrahydrofuran		118.3	70.0	130.0	1.6	30.0
Toluene		106.1	70.0	130.0	0.8	30.0
Trichloroethene		107.7	70.0	130.0	0.3	30.0
Trichlorofluoromethane		111.8	70.0	130.0	11.7	30.0
Vinyl chloride		128.2	70.0	130.0	8.7	30.0
Vinyl acetate		106.1	70.0	130.0	0.0	30.0
p,m-Xylene		92.3	70.0	130.0	2.7	30.0
o-Xylene		96.4	70.0	130.0	2.4	30.0



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C.O.C. PAGE # 1 OF 2

A

REPORT TO

AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Clifford Yantz / Kevin Schneider
 COMPANY Ramboll
 ADDRESS 2090 Commonwealth Blvd
 CITY Ann Arbor STATE Mi ZIP CODE 48105
 PHONE NO. 313-333-0211 FAX NO. _____ P.O. NO. 19400026028 (task 10)
 EMAIL ADDRESS Kevin.Schneider@Ramboll.com QUOTE NO. _____
Clifford.Yantz@Ramboll.com

CONTACT NAME SAME
 COMPANY _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP CODE _____
 PHONE NO. _____ EMAIL ADDRESS _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME Kevin Schneider
 TURNAROUND TIME REQUIRED 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type					Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.01	VP-1S	8/26/21	1020	1232	-30	-3	103	28921			X			X	
.02	* VP-1D		1222	1234	-29	-27	112	13750			X			X	
.03	* VP-2S		1329	1340	-26	-26	138	23682			X			X	
.04	VP-2D		1330	1339	-27	-2	221	35592			X			X	
.05	VP-3S		1053	1110	-30	-2	5	27395			X			X	
.06	* VP-3M		1055	1112	-30	-30	9	13709			X			X	
.07	* VP-3D		1130	1930	-27	-25	802	18352			X			X	
.08	* VP-5S		1430	1440	-30	-29	232	12432			X			X	
.09	VP-5M		1438	1450	-26	-2	220	34827			X			X	
.10	VP-5D		1441	1449	-28	-2	240	18327			X			X	

Temperature (Fahrenheit)				Pressure (inches of Hg)			
Interior	Ambient	Notes	Interior	Ambient	Notes		
Start	76		Start	29.32			
Stop	86		Stop	29.32			

Notes
 * No sample due to groundwater interference

RELINQUISHED BY: [Signature] DATE 8/27/21 TIME _____
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 9
 RELINQUISHED BY: [Signature] DATE 8/27/21 TIME 1500
 RECEIVED BY: [Signature] DATE 8/27/21 TIME 1500

RELINQUISHED BY: _____ DATE _____ TIME _____
 RECEIVED BY: _____ DATE _____ TIME _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: TEMP. ON ARRIVAL _____
RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



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 Phone (517) 332-0167 Fax (517) 332-4034
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A

REPORT TO **AIR/GAS SAMPLES CHAIN OF CUSTODY RECORD** **INVOICE TO**

CONTACT NAME: Clifford Yantz / Kevin Schneider
 COMPANY: Ramboll
 ADDRESS: 2090 Commonwealth Blvd
 CITY: Ann Arbor STATE: MI ZIP CODE: 48105
 PHONE NO.: 313-333-0211 FAX NO.: _____ P.O. NO.: 1940002628 (task10)
 EMAIL ADDRESS: Clifford.Yantz@ramboll.com Kevin.Schneider@ramboll.com QUOTE NO.: 1940002628

CONTACT NAME: SAME
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ EMAIL ADDRESS: _____

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: RACER Coldwater Road SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider *ZSK*
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: LEVEL II LEVEL III LEVEL IV EDD OTHER _____

Certifications
 OHIO VAP NELAP
 DoD NPDES

Sample Type				Analyses	
Indoor Air	Ambient Air	Soil Gas	Landfill Gas	TO-15	Other (specify in notes)

MERIT LAB NO. FOR LAB USE ONLY	SAMPLE TAG IDENTIFICATION-DESCRIPTION	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID							
									Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (specify in notes)	TO-15	Other (specify in notes)
27616.11	VP-6S	8/26/21	922	930	-28	-3	236	18353			X			X	
.12	* VP-6M	↓	924	934	-29	-26	126	38956			X			X	
.13	* VP-6D		1003	1803	-26	-22.5	#801	25396			X			X	
.14	VP-DUP-082621		-	-	-26	-2	-	18341			X			X	
/															

Temperature (Fahrenheit)				Pressure (inches of Hg)			
Interior	Ambient	Notes		Interior	Ambient	Notes	
	76				29.32		
Start				Start			
Stop	86			Stop	29.32		

Notes
 * No Sample due to groundwater interference

RELINQUISHED BY: ZSK DATE: 8/27/21 TIME: _____
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: [Signature] DATE: 8/27/21 TIME: 9:22
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: [Signature] DATE: 8/27/21 TIME: 1500
 SIGNATURE/ORGANIZATION: Johanna Chung

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SIGNATURE/ORGANIZATION: _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL: RT

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

APPENDIX C
Site-specific VIAC criteria & Transmittal Letter



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



LIESL EICHLER CLARK
DIRECTOR

October 22, 2020

VIA E-MAIL AND U.S. MAIL

Mr. David Favero
Deputy Cleanup Manager - Michigan
RACER Trust
500 Woodward Avenue, Suite 2650
Detroit, Michigan 48226

Dear Mr. Favero,

SUBJECT: Transmittal of Site-Specific Volatilization to Indoor Air Criteria:
Revitalizing Auto Communities Environmental Response (RACER) Trust,
Coldwater Road Landfill; Flint, Michigan; MID 005 356 860; Waste Data
System Number 393431

The purpose of this letter is to transmit Michigan Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), site-specific criteria for soil, groundwater, soil gas, and indoor air for the compounds on the Target Analyte List. The site-specific criteria for various scenarios are attached, as described below:

- The site-specific soil, groundwater, and soil gas criteria for residential houses constructed with a crawlspace with a dirt floor and groundwater three feet below grade are attached as Table 1.
- The site-specific soil, groundwater, and soil gas criteria for residential houses constructed as slab-on-grade and groundwater three feet below grade are attached as Table 2.
- The site-specific soil, groundwater, and soil gas criteria for residential houses constructed with a basement and groundwater three feet below grade are attached as Table 3.

EGLE developed the site-specific soil, groundwater, and soil gas criteria using values that better reflect best available information regarding facility geology and hydrogeology, building-specific information, and the toxicity and exposure risks posed by the hazardous substances present at the facility.

Provided that the conditions used to develop the site-specific criteria are met, the values may be used without further EGLE, MMD approval. As always, please maintain records to document that the site-specific criteria were used as intended and approved.

If desired, RACER may initiate the development of other site-specific criteria, using additional site-specific information consistent with the statutory provisions for development of site-specific criteria of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Such a process will require EGLE, MMD involvement, and any other site-specific criteria developed will require EGLE, MMD review and approval.

The site-specific criteria should be used to evaluate groundwater, soil, soil gas, and sub-slab soil gas collected as part of any volatilization to indoor air pathway investigation. In addition, the indoor air data should be evaluated against the Recommended Interim Action Screening Levels and the Time-Sensitive Recommended Interim Action Screening Levels (TS RIASL). Concentrations in sub-slab soil gas greater than the site-specific criteria should be interpreted as indicative of a potential long-term source of inhalation exposure risk. The exceedance of an indoor air TS RIASL will require more rapid exposure mitigation, such as immediately increased ventilation, and/or may require collaboration with the Michigan Department of Health and Human Services, and/or the Genesee County Health Department.

Should you have any questions, please contact me at 517-284-6580; RungeJ@Michigan.gov; or EGLE, MMD, P.O. Box 30241, Lansing, MI 48909-7741.

Sincerely,



Jacob Runge, Environmental Engineer
Management and Tracking Unit
Hazardous Waste Section
Materials Management Division


Enclosures

cc: Mr. Clifford Yantz, Senior Hydrogeologist, Ramboll
Mr. Kevin Schneider, Environmental Scientist, Ramboll
Mr. Rich Conforti, EGLE
Mr. John McCabe, EGLE
Ms. Nicole Sanabria, EGLE
cc/encl: Corrective Action File

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Nicole Sanabria, Geologist, MMD

FROM: Shane Morrison, Senior Toxicologist, RRD 

DATE: January 6, 2020

SUBJECT: Coldwater Road Landfill Site-Specific Criteria Evaluation

The following site-specific volatilization to indoor air criteria (VIAC) are the Michigan Department of Environment, Great Lakes, and Energy's (EGLE's) determination of values that reflect best available information regarding the toxicity and exposure risks posed by the hazardous substances present at the facility. These values are based upon the information provided with the request to develop site-specific VIAC for this facility. These values may be used provided it is documented that the conditions used to develop the site-specific criteria are met at the facility. Other values may be developed by a person consistent with the statutory provisions for development of site-specific criteria and provided for EGLE review and approval.

Correspondence transmitting these values to the submitter/consultant as part of a report, review, or other request must incorporate the appropriate sections of the VIAP model document language. As indicated in this document, when GVIC and SVIC are not applicable, the correspondence must include language indicating the requirement to satisfy the site-specific VIAC for all three media i.e., groundwater, soil, and soil gas. In addition, all of the following site-specific VIAC tables must be copied into the correspondence or letter as part of your response to the submitter/consultant.

Unrestricted residential site-specific criteria were included in the evaluation based on information provided and EGLE's residential conceptual site model. Exceedance of the site-specific unrestricted residential criteria will require restrictions or institutional controls for closure or aid in the determination of off-site migration.

If multiple foundation types are present for a structure (i.e. slab-on-grade, crawlspace, and/or basement), a sensitivity analysis should be performed to identify the most restrictive set of criteria to evaluate risk associated with the VIAP for that structure.

The site-specific criteria were generated using the United States Department of Agriculture (USDA) soil type of sand. Other site-specific criteria can be generated using a different soil type by providing soil characterization results from department approved methods on soils collected at the site.

Additional hazardous substances were included in the site-specific evaluation that were not explicitly requested. These hazardous substances may be components of recent petroleum releases and the primary breakdown products of tetrachloroethylene. The preemptive site-specific evaluation of these substances was provided to limit the potential need for future resubmittal for this facility.

Please contact me at MorrisonS5@michigan.gov or 517-284-5063 if you require any clarification of these comments and criterion or have additional questions.

cc: Eric Wildfang, Toxicology Unit Supervisor, RRD
Virginia Himich, Environmental Manager, MMD
Joe Rogers, Environmental Quality Specialist, MMD
Jacob Runge, Environmental Engineer, MMD

John McCabe, Senior Environmental Quality Analyst, MMD

Table 1. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **crawlspace with a dirt floor**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
83329	Acenaphthene	130 nc	48,000 nc	220 nc
208968	Acenaphthylene	65 nc	DATA	220 nc
994058	t-Amyl methyl ether (TAME)	3.9 (M) nc	DATA	65 nc
120127	Anthracene	43 (S) sol	4.1E+06 nc	1,000 nc
71432	Benzene	0.14 (M) ca	0.21 (M) ca	3.3 ca
56553	Benzo(a)anthracene	2.7 (MM) mut	89,000 (MM) mut	0.17 (MM) mut
78933	2-Butanone (MEK)	2,600 (DD) dev	3,800 (DD) dev	5,000 (DD) dev
75650	t-Butyl alcohol	230 nc	DATA	75 nc
104518	n-Butylbenzene	9.9 nc	120 nc	210 nc
135988	sec-Butylbenzene	8.1 nc	840 nc	0.42 nc
98066	t-Butylbenzene	1.9E-02 (M) nc	0.14 (M) nc	0.42 nc
110827	Cyclohexane	230 nc	44 (M) nc	6,300 nc
124481	Dibromochloromethane	4.0E-02 (MM) (M) mut	0.14 (MM) (M) mut	0.43 (MM) mut
95501	1,2-Dichlorobenzene	23 nc	310 nc	310 nc
541731	1,3-Dichlorobenzene	0.19 (M) nc	2.1 (M) nc	3.1 nc
106467	1,4-Dichlorobenzene	0.42 (M) ca	5.0 (M) ca	6.5 ca
75718	Dichlorodifluoromethane	12 nc	1.9 (M) nc	340 nc
75343	1,1-Dichloroethane	0.66 (M) ca	0.35 (M) ca	16 ca
107062	1,2-Dichloroethane	7.5E-02 (M) ca	0.11 (M) ca	0.98 ca
75354	1,1-Dichloroethylene	7.0 nc	1.6 (M) nc	210 nc
156592	cis-1,2-Dichloroethylene	0.36 (M) nc	0.26 (M) nc	8.3 nc
156605	trans-1,2-Dichloroethylene	3.0 nc	1.5 (M) nc	83 nc
78875	1,2-Dichloropropane	0.22 (M) nc	0.32 (M) nc	4.2 nc
542756	1,3-Dichloropropene	0.31 (M) (J) ca	0.45 (M) (J) ca	6.4 (J) ca
60297	Diethyl ether	75 nc	46 (M) nc	1,000 nc
108203	Diisopropyl ether	36 (DD) dev	34 (M) (DD) dev	700 (DD) dev

Table 1. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **crawlspace with a dirt floor**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
123911	1,4-Dioxane	59 ca	46 (M) ca	5.1 ca
64175	Ethanol	1.0E+05 (FF) st	1.2E+05 (EE) st	19,000 (EE) st
141786	Ethyl acetate	31 nc	28 nc	73 nc
637923	Ethyl-tert-butyl ether (ETBE)	22 nc	DATA	390 nc
100414	Ethylbenzene	0.47 (M) ca	2.0 (M) ca	10 ca
106934	Ethylene dibromide	5.5E-03 (M) ca	2.1E-02 (M) ca	4.2E-02 ca
86737	Fluorene	160 nc	87,000 nc	150 nc
142825	n-Heptane	150 nc	23 nc	3,700 nc
87683	Hexachlorobutadiene (C-46)	5.9E-02 ca	1.3 (M) ca	1.2 ca
110543	n-Hexane	28 nc	3.9 nc	730 nc
591786	2-Hexanone	22 (M) nc	35 (M) nc	31 nc
67630	Isopropyl alcohol	1,700 nc	1,100 (M) nc	210 nc
98828	Isopropyl benzene	0.11 (M) ca	0.73 (M) ca	2.4 ca
108101	4-Methyl-2-pentanone (MIBK)	720 (DD) dev	2,000 (M) (DD) dev	3,000 (DD) dev
1634044	Methyl-tert-butyl ether (MTBE)	12 ca	11 (M) ca	98 ca
96377	Methylcyclopentane	27 (M) nc	4.1 (M) nc	730 nc
91576	2-Methylnaphthalene	2.5 (M) nc	390 nc	10 nc
91203	Naphthalene	0.16 (M) ca	13 (M) ca	0.75 ca
109660	Pentane	39 (M) nc	4.9 (M) nc	1,000 nc
85018	Phenanthrene	7.7E-02 (M) nc	DATA	0.10 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (J) ca	DATA	0.25 (J) ca
103651	n-Propylbenzene	43 (DD) dev	340 (DD) dev	1,000 (DD) dev
129000	Pyrene	140 (S) sol	1.3E+07 nc	100 nc
100425	Styrene	2.7 ca	24 (M) ca	45 ca
630206	1,1,1,2-Tetrachloroethane	0.22 (M) ca	0.81 (M) ca	3.4 ca
79345	1,1,2,2-Tetrachloroethane	9.2E-02 (M) ca	0.67 (M) ca	0.44 ca

Table 1. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **restricted** site-specific criteria that apply to a residential house with a **crawlspace with a dirt floor**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
127184	Tetrachloroethylene	1.5 (FF) st	1.5 (M) (EE) st	41 (EE) st
109999	Tetrahydrofuran	1,500 nc	1,500 nc	2,100 nc
108883	Toluene	300 (FF) st	540 nc	5,200 nc
87616	1,2,3-Trichlorobenzene	2.9 (M) nc	270 nc	28 nc
120821	1,2,4-Trichlorobenzene	0.20 (M) nc	17 (M) nc	2.1 nc
71556	1,1,1-Trichloroethane	180 (FF) st	79 (EE) st	5,000 (EE) st
79005	1,1,2-Trichloroethane	2.2E-02 (M) nc	6.4E-02 (M) nc	0.21 nc
79016	Trichloroethylene	7.3E-02 (M) (DD) dev	5.5E-02 (M) (DD) dev	2.0 (DD) dev
75694	Trichlorofluoromethane	16 nc	3.4 (M) nc	460 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	750 nc	290 nc	20,000 nc
540841	2,2,4-Trimethyl pentane	160 nc	26 (M) nc	3,700 nc
526738	1,2,3-Trimethylbenzene	3.7 (M) (JT) nc	52 (M) (JT) nc	63 (JT) nc
95636	1,2,4-Trimethylbenzene	3.2 (JT) nc	28 (M) (JT) nc	63 (JT) nc
108678	1,3,5-Trimethylbenzene	3.0 (JT) nc	20 (M) (JT) nc	63 (JT) nc
75014	Vinyl chloride	5.1E-02 (MM) (M) mut	8.4E-03 (MM) (M) mut	1.6 (MM) mut
1330207	Xylenes	11 (J) nc	47 (M) (J) nc	230 (J) nc
76142	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	NR	NR	NR
622968	4-Ethyltoluene	NR	NR	NR
115071	Propylene	NR	NR	NR

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
83329	Acenaphthene	3,900 (S) sol	2.1E+05 nc	7,300 nc
208968	Acenaphthylene	65 nc	DATA	7,300 nc
994058	t-Amyl methyl ether (TAME)	3.9 (M) nc	DATA	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	1.0 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
78933	2-Butanone (MEK)	2,600 (DD) dev	31,000 (DD) dev	1.7E+05 (DD) dev
75650	t-Butyl alcohol	230 nc	DATA	2,500 nc
104518	n-Butylbenzene	44 nc	560 nc	7,000 nc
135988	sec-Butylbenzene	270 nc	3,800 nc	14 nc
98066	t-Butylbenzene	7.7E-02 (M) nc	0.64 (M) nc	14 nc
110827	Cyclohexane	290 nc	320 (M) nc	2.1E+05 nc
124481	Dibromochloromethane	0.78 (MM) (M) mut	0.40 (MM) (M) mut	14 (MM) mut
95501	1,2-Dichlorobenzene	370 nc	1,500 nc	10,000 nc
541731	1,3-Dichlorobenzene	2.6 nc	10 (M) nc	100 nc
106467	1,4-Dichlorobenzene	5.9 ca	23 (M) ca	220 ca
75718	Dichlorodifluoromethane	13 nc	12 (M) nc	11,000 nc
75343	1,1-Dichloroethane	4.7 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	1.4 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	18 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	3.4 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	16 nc	12 (M) nc	2,800 nc
78875	1,2-Dichloropropane	2.6 nc	2.1 (M) nc	140 nc
542756	1,3-Dichloropropene	3.3 (J) ca	3.1 (M) (J) ca	210 (J) ca
60297	Diethyl ether	1,200 nc	350 nc	35,000 nc
108203	Diisopropyl ether	36 (DD) dev	200 (M) (DD) dev	23,000 (DD) dev

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
123911	1,4-Dioxane	1,900 ca	370 (M) ca	170 ca
64175	Ethanol	1.0E+05 (FF) st	1.3E+06 (EE) st	6.3E+05 (EE) st
141786	Ethyl acetate	910 nc	210 nc	2,400 nc
637923	Ethyl-tert-butyl ether (ETBE)	22 nc	DATA	13,000 nc
100414	Ethylbenzene	2.8 ca	12 (M) ca	340 ca
106934	Ethylene dibromide	0.13 ca	7.4E-02 (M) ca	1.4 ca
86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	150 nc	130 nc	1.2E+05 nc
87683	Hexachlorobutadiene (C-46)	0.32 ca	2.5 (M) ca	39 ca
110543	n-Hexane	29 nc	25 nc	24,000 nc
591786	2-Hexanone	660 nc	220 (M) nc	1,000 nc
67630	Isopropyl alcohol	53,000 nc	9,900 nc	7,000 nc
98828	Isopropyl benzene	0.60 (M) ca	3.8 (M) ca	81 ca
108101	4-Methyl-2-pentanone (MIBK)	720 (DD) dev	12,000 (DD) dev	1.0E+05 (DD) dev
1634044	Methyl-tert-butyl ether (MTBE)	250 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	30 (M) nc	29 (M) nc	24,000 nc
91576	2-Methylnaphthalene	66 nc	1,700 nc	350 nc
91203	Naphthalene	4.2 (M) ca	67 (M) ca	25 ca
109660	Pentane	40 (M) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	7.7E-02 (M) nc	DATA	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	43 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	33 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	3.1 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	2.4 ca	2.7 (M) ca	15 ca

Table 2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **slab-on-grade**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
127184	Tetrachloroethylene	1.5 (FF) st	6.2 (M) (EE) st	1,400 (EE) st
109999	Tetrahydrofuran	45,000 nc	13,000 nc	70,000 nc
108883	Toluene	300 (FF) st	3,700 nc	1.7E+05 nc
87616	1,2,3-Trichlorobenzene	58 nc	840 nc	940 nc
120821	1,2,4-Trichlorobenzene	3.8 (M) nc	53 (M) nc	70 nc
71556	1,1,1-Trichloroethane	180 (FF) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	0.47 (M) nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	7.3E-02 (M) (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	22 nc	19 (M) nc	15,000 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	840 nc	860 nc	6.6E+05 nc
540841	2,2,4-Trimethyl pentane	160 nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	43 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	25 (JT) nc	150 (JT) nc	2,100 (JT) nc
108678	1,3,5-Trimethylbenzene	18 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	0.12 (MM) (M) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	75 (J) nc	280 (J) nc	7,600 (J) nc
76142	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	NR	NR	NR
622968	4-Ethyltoluene	NR	NR	NR
115071	Propylene	NR	NR	NR

Table 3. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **basement**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
83329	Acenaphthene	3,900 (S) sol	2.0E+05 nc	7,300 nc
208968	Acenaphthylene	65 nc	DATA	7,300 nc
994058	t-Amyl methyl ether (TAME)	3.9 (M) nc	DATA	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	1.0 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
78933	2-Butanone (MEK)	2,600 (DD) dev	31,000 (DD) dev	1.7E+05 (DD) dev
75650	t-Butyl alcohol	230 nc	DATA	2,500 nc
104518	n-Butylbenzene	44 nc	550 nc	7,000 nc
135988	sec-Butylbenzene	270 nc	3,800 nc	14 nc
98066	t-Butylbenzene	7.7E-02 (M) nc	0.64 (M) nc	14 nc
110827	Cyclohexane	290 nc	320 (M) nc	2.1E+05 nc
124481	Dibromochloromethane	0.78 (MM) (M) mut	0.40 (MM) (M) mut	14 (MM) mut
95501	1,2-Dichlorobenzene	370 nc	1,500 nc	10,000 nc
541731	1,3-Dichlorobenzene	2.6 nc	10 (M) nc	100 nc
106467	1,4-Dichlorobenzene	5.9 ca	23 (M) ca	220 ca
75718	Dichlorodifluoromethane	13 nc	12 (M) nc	11,000 nc
75343	1,1-Dichloroethane	4.7 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	1.4 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	18 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	3.4 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	16 nc	12 (M) nc	2,800 nc
78875	1,2-Dichloropropane	2.6 nc	2.1 (M) nc	140 nc
542756	1,3-Dichloropropene	3.3 (J) ca	3.1 (M) (J) ca	210 (J) ca
60297	Diethyl ether	1,200 nc	350 nc	35,000 nc
108203	Diisopropyl ether	36 (DD) dev	190 (M) (DD) dev	23,000 (DD) dev

Table 3. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **basement**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
123911	1,4-Dioxane	1,900 ca	360 (M) ca	170 ca
64175	Ethanol	1.0E+05 (FF) st	1.3E+06 (EE) st	6.3E+05 (EE) st
141786	Ethyl acetate	910 nc	210 nc	2,400 nc
637923	Ethyl-tert-butyl ether (ETBE)	22 nc	DATA	13,000 nc
100414	Ethylbenzene	2.8 ca	12 (M) ca	340 ca
106934	Ethylene dibromide	0.13 ca	7.4E-02 (M) ca	1.4 ca
86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	150 nc	130 nc	1.2E+05 nc
87683	Hexachlorobutadiene (C-46)	0.32 ca	2.5 (M) ca	39 ca
110543	n-Hexane	29 nc	25 nc	24,000 nc
591786	2-Hexanone	660 nc	210 (M) nc	1,000 nc
67630	Isopropyl alcohol	53,000 nc	9,800 nc	7,000 nc
98828	Isopropyl benzene	0.60 (M) ca	3.8 (M) ca	81 ca
108101	4-Methyl-2-pentanone (MIBK)	720 (DD) dev	12,000 (DD) dev	1.0E+05 (DD) dev
1634044	Methyl-tert-butyl ether (MTBE)	250 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	30 (M) nc	29 (M) nc	24,000 nc
91576	2-Methylnaphthalene	66 nc	1,700 nc	350 nc
91203	Naphthalene	4.2 (M) ca	67 (M) ca	25 ca
109660	Pentane	40 (M) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	7.7E-02 (M) nc	DATA	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	43 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	33 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	3.1 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	2.4 ca	2.7 (M) ca	15 ca

Table 3. Residential Volatilization to Indoor Air Criteria (VIAC). The following are **unrestricted** site-specific criteria that apply to a residential house with a **basement**, the depth to groundwater submitted for this site (i.e. 3 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater In Contact (GWIC) (µg/L)	Soil (µg/kg)	Soil Gas** (µg/m ³)
127184	Tetrachloroethylene	1.5 (FF) st	6.2 (M) (EE) st	1,400 (EE) st
109999	Tetrahydrofuran	45,000 nc	13,000 nc	70,000 nc
108883	Toluene	300 (FF) st	3,700 nc	1.7E+05 nc
87616	1,2,3-Trichlorobenzene	58 nc	830 nc	940 nc
120821	1,2,4-Trichlorobenzene	3.8 (M) nc	53 (M) nc	70 nc
71556	1,1,1-Trichloroethane	180 (FF) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	0.47 (M) nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	7.3E-02 (M) (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	22 nc	19 (M) nc	15,000 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	840 nc	860 nc	6.6E+05 nc
540841	2,2,4-Trimethyl pentane	160 nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	43 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	25 (JT) nc	150 (JT) nc	2,100 (JT) nc
108678	1,3,5-Trimethylbenzene	18 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	0.12 (MM) (M) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	75 (J) nc	280 (J) nc	7,600 (J) nc
76142	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	NR	NR	NR
622968	4-Ethyltoluene	NR	NR	NR
115071	Propylene	NR	NR	NR

FOOTNOTES

**Soil gas site-specific volatilization to indoor air (SSVIAC) are applicable for all depths.

- Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (**ca**) = Carcinogenic; (**nc**) = Non-Carcinogenic; (**dev**) = Developmental; (**mut**) = Mutagenic cancer; (**st**) = Short-term (i.e., less than chronic exposure).
- Footnote **AA**: Health-based groundwater SSVIAC are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level (**FESL**) is 10,000 µg/L.
- Footnote **C**: The health-based SSVIAC exceeds the chemical-specific soil saturation screening level (**Csat**). The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid (**NAPL**) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote **CC**: Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard equations. The health-based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote **DATA**: Insufficient physical chemical parameters to calculate a health-based SSVIAC for specified media. If detections are present in specified media, health-based soil vapor SSVIAC should be used to evaluate risk.
- Footnote **DD**: Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote **EE**: The acceptable air concentration (**AAC**) for the volatile hazardous substances is not derived using standard equations. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the EGLE's Air Quality Division.
- Footnote **FF**: The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater health-based SSVIAC are based on modification of the standard equations by the department to develop applicable shallow groundwater values.
- Footnote **GG**: Health-based SSVIAC for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level (**LEL**) for methane.
- Footnote **GW**: The calculated health-based SSVIAC for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote **ID**: Requires further evaluation to determine the appropriate media to sample.
- Footnote **J**: Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote **JT**: Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- Footnote **M**: The health-based SSVIAC may be below target detection limits (**TDL**). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
- Footnote **MM**: Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote **NA**: The hazardous substance does not meet the department's definition of a volatile; therefore, no health-based SSVIAC were developed.
- Footnote **NR**: The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.
- Footnote **S**: Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.
- Footnote **TX**: The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance.