

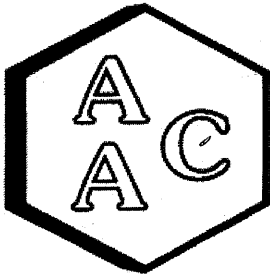
Volatile Organic Compound Analysis Results for Samples Collected in Nuiqsut, Alaska

Sample Location: Nuiqsut Ambient Air Quality Monitoring Station

Date Sample Collected: 3/14/2022

Analysis Conducted by: Atmospheric Analysis & Consulting, Inc.

Analysis Method: EPA Method TO-15



Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

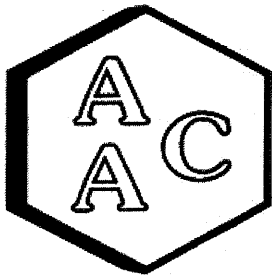
CLIENT : SLR International Corporation
PROJECT NO : 220533
MATRIX : AIR
UNITS : PPB (v/v)

DATE RECEIVED : 03/16/2022
DATE REPORTED : 03/17/2022
ANALYST : RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

<i>Client ID</i>	NUI			Sample Reporting Limit (SRL) (MRLxDF's)	Method Reporting Limit (MRL)
<i>AAC ID</i>	220533-29002				
<i>Date Sampled</i>	03/14/2022				
<i>Date Analyzed</i>	03/16/2022				
<i>Can Dilution Factor</i>	1.50				
<i>Compound</i>	Result	Qualifier	Analysis DF		
Chlorodifluoromethane	<SRL	U	1	0.75	0.50
Propene	<SRL	U	1	1.50	1.00
Dichlorodifluoromethane	<SRL	U	1	0.75	0.50
Chloromethane	<SRL	U	1	0.75	0.50
Dichlorotetrafluoroethane	<SRL	U	1	0.75	0.50
Vinyl Chloride	<SRL	U	1	0.75	0.50
Methanol	<SRL	U	1	7.50	5.00
1,3-Butadiene	<SRL	U	1	0.75	0.50
Bromomethane	<SRL	U	1	0.75	0.50
Chloroethane	<SRL	U	1	0.75	0.50
Dichlorofluoromethane	<SRL	U	1	0.75	0.50
Ethanol	<SRL	U	1	3.00	2.00
Vinyl Bromide	<SRL	U	1	0.75	0.50
Acetone	<SRL	U	1	3.00	2.00
Trichlorofluoromethane	<SRL	U	1	0.75	0.50
2-Propanol (IPA)	3.76		1	3.00	2.00
Acrylonitrile	<SRL	U	1	3.00	2.00
1,1-Dichloroethene	<SRL	U	1	0.75	0.50
Methylene Chloride (DCM)	<SRL	U	1	1.50	1.00
Allyl Chloride	<SRL	U	1	1.50	1.00
Carbon Disulfide	<SRL	U	1	3.00	2.00
Trichlorotrifluoroethane	<SRL	U	1	0.75	0.50
trans-1,2-Dichloroethene	<SRL	U	1	0.75	0.50
1,1-Dichloroethane	<SRL	U	1	0.75	0.50
Methyl Tert Butyl Ether (MTBE)	<SRL	U	1	0.75	0.50
Vinyl Acetate	<SRL	U	1	1.50	1.00
2-Butanone (MEK)	<SRL	U	1	1.50	1.00
cis-1,2-Dichloroethene	<SRL	U	1	0.75	0.50
Hexane	1.17		1	0.75	0.50
Chloroform	<SRL	U	1	0.75	0.50
Ethyl Acetate	<SRL	U	1	0.75	0.50
Tetrahydrofuran	<SRL	U	1	0.75	0.50
1,2-Dichloroethane	<SRL	U	1	0.75	0.50
1,1,1-Trichloroethane	<SRL	U	1	0.75	0.50
Benzene	<SRL	U	1	0.75	0.50





Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT : SLR International Corporation
PROJECT NO : 220533
MATRIX : AIR
UNITS : PPB (v/v)

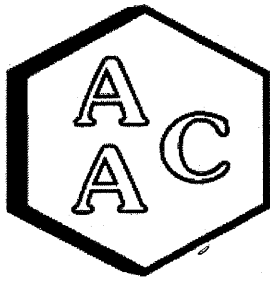
DATE RECEIVED : 03/16/2022
DATE REPORTED : 03/17/2022
ANALYST : RC

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

<i>Client ID</i>	NUI			Sample Reporting Limit (SRL) (MRL×DF's)	Method Reporting Limit (MRL)
<i>AAC ID</i>	220533-29002				
<i>Date Sampled</i>	03/14/2022				
<i>Date Analyzed</i>	03/16/2022				
<i>Can Dilution Factor</i>	1.50				
<i>Compound</i>	Result	Qualifier	Analysis DF		
Carbon Tetrachloride	<SRL	U	1	0.75	0.50
Cyclohexane	<SRL	U	1	0.75	0.50
1,2-Dichloropropane	<SRL	U	1	0.75	0.50
Bromodichloromethane	<SRL	U	1	0.75	0.50
1,4-Dioxane	<SRL	U	1	1.50	1.00
Trichloroethene (TCE)	<SRL	U	1	0.75	0.50
2,2,4-Trimethylpentane	26.9		1	0.75	0.50
Heptane	<SRL	U	1	0.75	0.50
cis-1,3-Dichloropropene	<SRL	U	1	0.75	0.50
4-Methyl-2-pentanone (MiBK)	<SRL	U	1	0.75	0.50
trans-1,3-Dichloropropene	<SRL	U	1	0.75	0.50
1,1,2-Trichloroethane	<SRL	U	1	0.75	0.50
Toluene	<SRL	U	1	0.75	0.50
2-Hexanone (MBK)	<SRL	U	1	1.50	1.00
Dibromochloromethane	<SRL	U	1	0.75	0.50
1,2-Dibromoethane	<SRL	U	1	0.75	0.50
Tetrachloroethene (PCE)	<SRL	U	1	0.75	0.50
Chlorobenzene	<SRL	U	1	0.75	0.50
Ethylbenzene	<SRL	U	1	0.75	0.50
m & p-Xylene	<SRL	U	1	1.50	1.00
Bromoform	<SRL	U	1	0.75	0.50
Styrene	<SRL	U	1	0.75	0.50
1,1,2,2-Tetrachloroethane	<SRL	U	1	0.75	0.50
o-Xylene	<SRL	U	1	0.75	0.50
4-Ethyltoluene	<SRL	U	1	0.75	0.50
1,3,5-Trimethylbenzene	<SRL	U	1	0.75	0.50
1,2,4-Trimethylbenzene	<SRL	U	1	0.75	0.50
Benzyl Chloride (a-Chlorotoluene)	<SRL	U	1	0.75	0.50
1,3-Dichlorobenzene	<SRL	U	1	0.75	0.50
1,4-Dichlorobenzene	<SRL	U	1	0.75	0.50
1,2-Dichlorobenzene	<SRL	U	1	0.75	0.50
1,2,4-Trichlorobenzene	<SRL	U	1	7.50	5.00
Hexachlorobutadiene	<SRL	U	1	0.75	0.50
BFB-Surrogate Std. % Recovery		89%			70-130%

U - Compound was not detected at or above the SRL.





Atmospheric Analysis & Consulting, Inc.

QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 03/16/2022
 MATRIX : High Purity N₂
 UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-02
 CALIBRATION STD ID : MSI-030722-01
 ANALYST : RC

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Continuing Calibration Verification of the 03/14/2022 Calibration

Analyte Compounds	Source ¹	CCV ²	% Recovery ³
4-BFB (surrogate standard)	10.00	9.92	99
Chlorodifluoromethane	10.50	8.86	84
Propene	10.60	9.55	90
Dichlorodifluoromethane	10.40	9.06	87
Dimethyl Ether	10.80	12.58	116
Chloromethane	10.40	12.40	119
Dichlorotetrafluoroethane	10.30	10.63	103
Vinyl Chloride	10.50	12.16	116
Acetaldehyde	22.50	27.85	124
Methanol	20.10	24.31	121
1,3-Butadiene	10.60	13.14	124
Bromomethane	10.40	10.70	103
Chloroethane	10.30	10.82	105
Dichlorofluoromethane	10.50	10.62	101
Ethanol	11.20	12.42	111
Vinyl Bromide	10.50	10.00	95
Acrolein	11.10	11.92	107
Acetone	10.60	10.85	102
Trichlorofluoromethane	10.50	9.65	92
2-Propanol (IPA)	11.00	12.23	111
Acrylonitrile	11.40	11.55	101
1,1-Dichloroethene	10.40	10.42	100
Methylene Chloride (DCM)	10.50	11.11	106
TertButanol (TBA)	11.30	10.50	93
Allyl Chloride	10.40	9.55	92
Carbon Disulfide	10.50	11.02	105
Trichlorotrifluoroethane	10.40	10.30	99
trans-1,2-Dichloroethene	10.60	8.94	84
1,1-Dichloroethane	10.50	8.37	80
Methyl Tert Butyl Ether (MTBE)	10.50	7.62	73
Vinyl Acetate	11.00	9.19	84
2-Butanone (MEK)	10.60	8.45	80
cis-1,2-Dichloroethene	10.50	9.18	87
Hexane	10.70	8.61	80
Chloroform	10.60	8.13	77
Ethyl Acetate	10.60	8.68	82
Tetrahydrofuran	10.20	8.02	79
1,2-Dichloroethane	10.50	7.73	74
1,1,1-Trichloroethane	10.40	7.85	75
Benzene	10.60	8.79	83
Carbon Tetrachloride	10.20	7.96	78
Cyclohexane	10.50	8.99	86

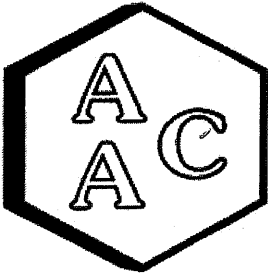
Analyte Compounds (Continued)	Source ¹	CCV ²	% Recovery ³
1,2-Dichloropropane	10.50	8.57	82
Bromodichloromethane	10.40	8.02	77
1,4-Dioxane	10.40	9.09	87
Trichloroethene (TCE)	10.40	9.58	92
2,2,4-Trimethylpentane	10.40	8.60	83
Methyl Methacrylate	11.00	8.55	78
Heptane	10.50	8.97	85
cis-1,3-Dichloropropene	10.40	8.60	83
4-Methyl-2-pentanone (MiBK)	10.40	8.95	86
trans-1,3-Dichloropropene	10.50	8.28	79
1,1,2-Trichloroethane	10.50	9.64	92
Toluene	10.60	9.56	90
2-Hexanone (MBK)	10.50	9.42	90
Dibromochloromethane	10.30	9.49	92
1,2-Dibromoethane	10.60	9.88	93
Tetrachloroethene (PCE)	10.40	10.46	101
Chlorobenzene	10.60	10.10	95
Ethylbenzene	10.50	9.70	92
m & p-Xylene	21.00	20.57	98
Bromoform	10.50	10.20	97
Styrene	10.50	10.70	102
1,1,2,2-Tetrachloroethane	10.50	10.88	104
o-Xylene	10.50	10.20	97
1,2,3-Trichloropropane	10.40	10.27	99
Isopropylbenzene (Cumene)	10.40	10.31	99
α-Pinene	11.40	10.38	91
2-Chlorotoluene	10.40	10.62	102
n-Propylbenzene	10.50	10.22	97
4-Ethyltoluene	10.30	10.65	103
1,3,5-Trimethylbenzene	10.30	10.22	99
β-Pinene	11.30	9.04	80
1,2,4-Trimethylbenzene	10.30	10.64	103
Benzyl Chloride (a-Chlorotoluene)	10.40	10.31	99
1,3-Dichlorobenzene	10.40	11.39	110
1,4-Dichlorobenzene	10.30	11.17	108
Sec-ButylBenzene	10.40	10.63	102
1,2-Dichlorobenzene	10.60	11.52	109
n-ButylBenzene	10.40	10.92	105
1,2-Dibromo-3-Chloropropane	10.40	10.66	103
1,2,4-Trichlorobenzene	11.00	9.92	90
Naphthalene	11.50	10.33	90
Hexachlorobutadiene	11.00	11.86	108

¹ Concentration of analyte compound in certified source standard.

² Measured result from daily Continuing Calibration Verification (CCV).

³ The acceptable range for analyte recovery is 100±30%.





Atmospheric Analysis & Consulting, Inc.

QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 03/16/2022

MATRIX : High Purity N₂

UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-02

CALIBRATION STD ID : MS1-030722-01

ANALYST : RC

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Laboratory Control Spike Analysis

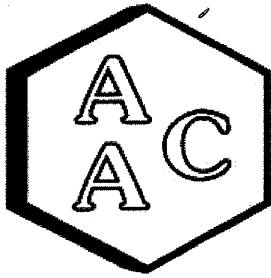
<i>System Monitoring Compounds</i>	<i>Sample Concentration</i>	<i>Spike Added</i>	<i>LCS¹ Recovery</i>	<i>LCSD¹ Recovery</i>	<i>LCS¹ % Recovery²</i>	<i>LCSD¹ % Recovery²</i>	<i>RPD³</i>
4-BFB (surrogate standard)	0.0	10.00	9.92	9.95	99.2	99.5	0.3
1,1-Dichloroethene	0.0	10.40	10.42	10.92	100	105	4.7
Methylene Chloride (DCM)	0.0	10.50	11.11	11.42	106	109	2.8
Benzene	0.0	10.60	8.79	8.52	83	80	3.1
Trichloroethene (TCE)	0.0	10.40	9.58	10.04	92	97	4.7
Toluene	0.0	10.60	9.56	9.62	90	91	0.6
Tetrachloroethene (PCE)	0.0	10.40	10.46	10.79	101	104	3.1
Chlorobenzene	0.0	10.60	10.10	10.43	95	98	3.2
Ethylbenzene	0.0	10.50	9.70	9.97	92	95	2.7
m & p-Xylene	0.0	21.00	20.57	21.27	98	101	3.3
o-Xylene	0.0	10.50	10.20	10.28	97	98	0.8

¹ Laboratory Control Spike (LCS) / Laboratory Control Spike Duplicate (LCSD)

² The acceptable range for analyte recovery is 100±30%.

³ Relative Percent Difference (RPD) between LCS recovery and LCSD recovery (acceptable range is <25%).





Atmospheric Analysis & Consulting, Inc.

QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 03/16/2022

INSTRUMENT ID : GC/MS-02

MATRIX : High Purity He or N₂

ANALYST : RC

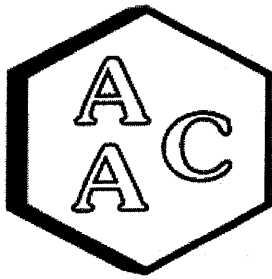
UNITS : PPB (v/v)

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Method Blank Analysis

Analyte Compounds	MB 031622	Reporting Limit (RL)	Analyte Compounds (Continued)	MB 031622	Reporting Limit (RL)
4-BFB (surrogate standard)	92%	100±30%	1,2-Dichloropropane	<RL	0.5
Chlorodifluoromethane	<RL	0.5	Bromodichloromethane	<RL	0.5
Propene	<RL	1.0	1,4-Dioxane	<RL	1.0
Dichlorodifluoromethane	<RL	0.5	Trichloroethene (TCE)	<RL	0.5
Dimethyl Ether	<RL	0.5	2,2,4-Trimethylpentane	<RL	0.5
Chloromethane	<RL	0.5	Methyl Methacrylate	<RL	0.5
Dichlorotetrafluoroethane	<RL	0.5	Heptane	<RL	0.5
Vinyl Chloride	<RL	0.5	cis-1,3-Dichloropropene	<RL	0.5
Acetaldehyde	<RL	5.0	4-Methyl-2-pentanone (MiBK)	<RL	0.5
Methanol	<RL	5.0	trans-1,3-Dichloropropene	<RL	0.5
1,3-Butadiene	<RL	0.5	1,1,2-Trichloroethane	<RL	0.5
Bromomethane	<RL	0.5	Toluene	<RL	0.5
Chloroethane	<RL	0.5	2-Hexanone (MBK)	<RL	1.0
Dichlorofluoromethane	<RL	0.5	Dibromochloromethane	<RL	0.5
Ethanol	<RL	2.0	1,2-Dibromoethane	<RL	0.5
Vinyl Bromide	<RL	0.5	Tetrachloroethene (PCE)	<RL	0.5
Acrolein	<RL	1.0	Chlorobenzene	<RL	0.5
Acetone	<RL	2.0	Ethylbenzene	<RL	0.5
Trichlorofluoromethane	<RL	0.5	m & p-Xylene	<RL	1.0
2-Propanol (IPA)	<RL	2.0	Bromoform	<RL	0.5
Acrylonitrile	<RL	2.0	Styrene	<RL	0.5
1,1-Dichloroethene	<RL	0.5	1,1,2,2-Tetrachloroethane	<RL	0.5
Methylene Chloride (DCM)	<RL	1.0	o-Xylene	<RL	0.5
TertButanol (TBA)	<RL	0.5	1,2,3-Trichloropropane	<RL	0.5
Allyl Chloride	<RL	1.0	Isopropylbenzene (Cumene)	<RL	0.5
Carbon Disulfide	<RL	2.0	α-Pinene	<RL	0.5
Trichlorotrifluoroethane	<RL	0.5	2-Chlorotoluene	<RL	0.5
trans-1,2-Dichloroethene	<RL	0.5	n-Propylbenzene	<RL	0.5
1,1-Dichloroethane	<RL	0.5	4-Ethyltoluene	<RL	0.5
Methyl Tert Butyl Ether (MTBE)	<RL	0.5	1,3,5-Trimethylbenzene	<RL	0.5
Vinyl Acetate	<RL	1.0	β-Pinene	<RL	0.5
2-Butanone (MEK)	<RL	1.0	1,2,4-Trimethylbenzene	<RL	0.5
cis-1,2-Dichloroethene	<RL	0.5	Benzyl Chloride (α-Chlorotoluene)	<RL	0.5
Hexane	<RL	0.5	1,3-Dichlorobenzene	<RL	0.5
Chloroform	<RL	0.5	1,4-Dichlorobenzene	<RL	0.5
Ethyl Acetate	<RL	0.5	Sec-Butylbenzene	<RL	0.5
Tetrahydrofuran	<RL	0.5	1,2-Dichlorobenzene	<RL	0.5
1,2-Dichloroethane	<RL	0.5	n-Butylbenzene	<RL	0.5
1,1,1-Trichloroethane	<RL	0.5	1,2-Dibromo-3-Chloropropane	<RL	0.5
Benzene	<RL	0.5	1,2,4-Trichlorobenzene	<RL	5.0
Carbon Tetrachloride	<RL	0.5	Naphthalene	<RL	5.0
Cyclohexane	<RL	0.5	Hexachlorobutadiene	<RL	0.5





Atmospheric Analysis & Consulting, Inc.

QUALITY CONTROL / QUALITY ASSURANCE REPORT

ANALYSIS DATE : 03/16/2022

MATRIX : Air

UNITS : PPB (v/v)

INSTRUMENT ID : GC/MS-02

ANALYST : RC

DILUTION FACTOR¹ : x293.62

VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

Duplicate Analysis of AAC Sample ID: 220491-28725

Analyte Compounds	Sample	Duplicate	RPD ²
4-BFB (surrogate standard)	9.71	9.58	1.3
Chlorodifluoromethane	197	197	0.0
Propene	13300	12400	7.4
Dichlorodifluoromethane	<SRL	<SRL	NA
Dimethyl Ether	1520	1320	14.1
Chloromethane	<SRL	<SRL	NA
Dichlorotetrafluoroethane	<SRL	<SRL	NA
Vinyl Chloride	669	617	8.2
Acetaldehyde	J 1470	1190	21.4
Methanol	2010	1660	19.5
1,3-Butadiene	<SRL	<SRL	NA
Bromomethane	<SRL	<SRL	NA
Chloroethane	<SRL	<SRL	NA
Dichlorofluoromethane	<SRL	<SRL	NA
Ethanol	3940	3650	7.8
Vinyl Bromide	<SRL	<SRL	NA
Acrolein	<SRL	<SRL	NA
Acetone	9200	8540	7.4
Trichlorofluoromethane	<SRL	<SRL	NA
2-Propanol (IPA)	1740	1550	11.6
Acrylonitrile	<SRL	<SRL	NA
1,1-Dichloroethene	<SRL	<SRL	NA
Methylene Chloride (DCM)	<SRL	<SRL	NA
TertButanol (TBA)	934	875	6.5
Allyl Chloride	<SRL	<SRL	NA
Carbon Disulfide	<SRL	<SRL	NA
Trichlorotrifluoroethane	<SRL	<SRL	NA
trans-1,2-Dichloroethene	<SRL	<SRL	NA
1,1-Dichloroethane	<SRL	<SRL	NA
Methyl Tert Butyl Ether (MTBE)	<SRL	<SRL	NA
Vinyl Acetate	<SRL	<SRL	NA
2-Butanone (MEK)	2490	2410	3.5
cis-1,2-Dichloroethene	267	261	2.2
Hexane	819	813	0.7
Chloroform	<SRL	<SRL	NA
Ethyl Acetate	232	211	9.3
Tetrahydrofuran	1860	1820	2.2
1,2-Dichloroethane	<SRL	<SRL	NA
1,1,1-Trichloroethane	<SRL	<SRL	NA
Benzene	772	740	4.3
Carbon Tetrachloride	<SRL	<SRL	NA
Cyclohexane	1410	1420	0.8

Analyte Compounds (Continued)	Sample	Duplicate	RPD ²
1,2-Dichloropropane	<SRL	<SRL	NA
Bromodichloromethane	<SRL	<SRL	NA
1,4-Dioxane	<SRL	<SRL	NA
Trichloroethene (TCE)	<SRL	<SRL	NA
2,2,4-Trimethylpentane	273	285	4.2
Methyl Methacrylate	<SRL	<SRL	NA
Heptane	1260	1230	2.4
cis-1,3-Dichloropropene	<SRL	<SRL	NA
4-Methyl-2-pentanone (MiBK)	197	<SRL	NA
trans-1,3-Dichloropropene	<SRL	<SRL	NA
1,1,2-Trichloroethane	<SRL	<SRL	NA
Toluene	7470	7310	2.1
2-Hexanone (MBK)	<SRL	<SRL	NA
Dibromochloromethane	<SRL	<SRL	NA
1,2-Dibromoethane	<SRL	<SRL	NA
Tetrachloroethene (PCE)	<SRL	<SRL	NA
Chlorobenzene	<SRL	<SRL	NA
Ethylbenzene	4010	3910	2.7
m & p-Xylene	6590	6510	1.2
Bromoform	<SRL	<SRL	NA
Styrene	244	229	6.2
1,1,2,2-Tetrachloroethane	<SRL	<SRL	NA
o-Xylene	1990	2020	1.5
1,2,3-Trichloropropane	<SRL	<SRL	NA
Isopropylbenzene (Cumene)	426	408	4.2
α-Pinene	12900	11900	8.8
2-Chlorotoluene	<SRL	<SRL	NA
n-Propylbenzene	408	408	0.0
4-Ethyltoluene	<SRL	<SRL	NA
1,3,5-Trimethylbenzene	581	596	2.5
β-Pinene	1550	1300	17.5
1,2,4-Trimethylbenzene	1590	1540	3.2
Benzyl Chloride (a-Chlorotoluene)	<SRL	<SRL	NA
1,3-Dichlorobenzene	<SRL	255	NA
1,4-Dichlorobenzene	261	258	1.1
Sec-ButylBenzene	<SRL	<SRL	NA
1,2-Dichlorobenzene	<SRL	<SRL	NA
n-ButylBenzene	<SRL	<SRL	NA
1,2-Dibromo-3-Chloropropane	<SRL	<SRL	NA
1,2,4-Trichlorobenzene	<SRL	<SRL	NA
Naphthalene	<SRL	<SRL	NA
Hexachlorobutadiene	<SRL	<SRL	NA

¹ Dilution factor is the product of the Canister Dilution Factor and the Analysis Dilution Factor.

² Relative Percent Difference (RPD) between Sample analysis and Duplicate analysis (acceptable range is <25%).

SRL - Sample Reporting Limit (minimum)

J - Estimated value between the detection limit and the minimum reporting limit, shown for duplication purposes only.

