CERTIFICATION

SDG No:	1701477A	Laboratory:	Eurofins, Folson, CA
Site:	BMSMC	Matrix:	Air

SUMMARY: Air samples (Table 1) were collected on the BMSMC facility. The BMSMC facility is located in Humacao, PR. Samples were taken January 26 & 29, 2017 and were analyzed in Eurofins Laboratory of Folson, California that reported the data under SDG No.: 1701477A. Results were validated using the validation guidelines of Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999. USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The analyses performed are shown in Table 1. Individual data review worksheets are enclosed for each target analyte group. The data sample summary form shows analyte results that were qualified.

In summary, the results are valid and can be used for decision making purposes.

Table 1. Samples analyzed and analysis performed

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	ANALYSIS PERFORMED
1701477A-01A	B18SS-2-012617	Air	TO-15 (full suite)
1701477A-02A	B18SS-3-012617	Air	TO-15 (full suite)
1701477A-03A	B18SS-4-012617	Air	TO-15 (full suite)
1701477A-04A	B18SS-5-012617	Air	TO-15 (full suite)
1701477A-05A	B13SS-1-012917	Air	TO-15 (full suite)
1701477A-06A	B13SS-2-012917	Air	TO-15 (full suite)
1701477A-07A	B13SS-2DUP-012917	Air	TO-15 (full suite)
1701477A-08A	B13SS-3-012917	Air	TO-15 (full suite)
1701477A-09A	B15SS-1-012917	Air	TO-15 (full suite)
1701477A-10A	B15SS-1DUP-012917	Air	TO-15 (full suite)

Reviewer Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: March 18, 2017

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO
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Client Sample ID: B18SS-2-012617

Lab ID#: 1701477A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020607**	**Date of Collection:**	**1/26/17 6:38:00 PM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**2/6/17 01:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.57 J	5.9	2.8 J
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	1.2 J	24	2.6 J
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	12	Not Detected
Freon 11	1.2	1.3	6.7	7.5
Ethanol	4.8	89	9.0	170
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	8.6 J	28	20 J
2-Propanol	4.8	35	12	86
Carbon Disulfide	4.8	Not Detected	15	Not Detected
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	2.4	4.2	8.4
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	1.0 J	14	3.1 J
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	Not Detected	4.1	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	1.2	5.6	5.6
Benzene	1.2	0.22 J	3.8	0.70 J
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	1.5	4.9	6.3
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.9	Not Detected
Toluene	1.2	0.80 J	4.5	3.0
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected
2-Hexanone	4.8	Not Detected	19	Not Detected

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Client Sample ID: B18SS-2-012617

Lab ID#: 1701477A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020607**	**Date of Collection:**	**1/26/17 6:38:00 PM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**2/6/17 01:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	0.32 J	5.2	1.4 J
o-Xylene	1.2	Not Detected	5.2	Not Detected
Styrene	1.2	Not Detected	5.1	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	Not Detected	5.8	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	5.8	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
Naphthalene	2.4	Not Detected	12	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	101	70-130

LABORATORIO ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUÍMICO LICENCIADO

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Client Sample ID: B18SS-3-012617

Lab ID#: 1701477A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020608**	**Date of Collection:**	**1/26/17 6:18:00 PM**
Dil. Factor:	**2.42**	**Date of Analysis:**	**2/6/17 02:15 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.52 J	6.0	2.6 J
Freon 114	1.2	Not Detected	8.4	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.8	Not Detected	13	Not Detected
Freon 11	1.2	0.39 J	6.8	2.2 J
Ethanol	4.8	280	9.1	540
Freon 113	1.2	Not Detected	9.3	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	71	29	170
2-Propanol	4.8	390	12	950
Carbon Disulfide	4.8	0.96 J	15	3.0 J
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	0.43 J	4.3	1.5 J
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	7.8	14	23
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	5.9	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	Not Detected	4.2	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.6	Not Detected
2,2,4-Trimethylpentane	1.2	0.41 J	5.6	1.9 J
Benzene	1.2	0.27 J	3.9	0.87 J
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	0.47 J	5.0	1.9 J
Trichloroethene	1.2	Not Detected	6.5	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.1	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	0.32 J	5.0	1.3 J
Toluene	1.2	2.2	4.6	8.2
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.2	Not Detected
2-Hexanone	4.8	0.76 J	20	3.1 J

Miguel Infante Méndez Nº 1888 QUÍMICO LICENCIADO ASOCIADO DE PUERTO RICO

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Client Sample ID: B18SS-3-012617

Lab ID#: 1701477A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020608**	**Date of Collection:**	**1/26/17 6:18:00 PM**
Dil. Factor:	**2.42**	**Date of Analysis:**	**2/6/17 02:15 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.3	Not Detected
Chlorobenzene	1.2	Not Detected	5.6	Not Detected
Ethyl Benzene	1.2	0.43 J	5.2	1.8 J
m,p-Xylene	1.2	1.1 J	5.2	4.9 J
o-Xylene	1.2	0.52 J	5.2	2.2 J
Styrene	1.2	Not Detected	5.2	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.9	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.3	Not Detected
Propylbenzene	1.2	Not Detected	5.9	Not Detected
4-Ethyltoluene	1.2	0.27 J	5.9	1.3 J
1,3,5-Trimethylbenzene	1.2	Not Detected	5.9	Not Detected
1,2,4-Trimethylbenzene	1.2	0.26 J	5.9	1.3 J
1,3-Dichlorobenzene	1.2	1.4	7.3	8.6
1,4-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.3	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	36	Not Detected
Hexachlorobutadiene	4.8	Not Detected	52	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: B18SS-4-012617

Lab ID#: 1701477A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020609	Date of Collection:	1/26/17 5:07:00 PM
Dil. Factor:	2.82	Date of Analysis:	2/6/17 02:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.4	0.57 J	7.0	2.8 J
Freon 114	1.4	Not Detected	9.8	Not Detected
Chloromethane	14	Not Detected	29	Not Detected
Vinyl Chloride	1.4	Not Detected	3.6	Not Detected
1,3-Butadiene	1.4	Not Detected	3.1	Not Detected
Bromomethane	14	Not Detected	55	Not Detected
Chloroethane	5.6	Not Detected	15	Not Detected
Freon 11	1.4	0.33 J	7.9	1.9 J
Ethanol	5.6	420	11	780
Freon 113	1.4	Not Detected	11	Not Detected
1,1-Dichloroethene	1.4	Not Detected	5.6	Not Detected
Acetone	14	25	33	59
2-Propanol	5.6	630 E	14	1600 E
Carbon Disulfide	5.6	Not Detected	18	Not Detected
3-Chloropropene	5.6	Not Detected	18	Not Detected
Methylene Chloride	14	Not Detected	49	Not Detected
Methyl tert-butyl ether	5.6	Not Detected	20	Not Detected
trans-1,2-Dichloroethene	1.4	Not Detected	5.6	Not Detected
Hexane	1.4	0.56 J	5.0	2.0 J
1,1-Dichloroethane	1.4	Not Detected	5.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.6	6.2	17	18
cis-1,2-Dichloroethene	1.4	Not Detected	5.6	Not Detected
Tetrahydrofuran	1.4	Not Detected	4.2	Not Detected
Chloroform	1.4	Not Detected	6.9	Not Detected
1,1,1-Trichloroethane	1.4	Not Detected	7.7	Not Detected
Cyclohexane	1.4	0.36 J	4.8	1.2 J
Carbon Tetrachloride	1.4	Not Detected	8.9	Not Detected
2,2,4-Trimethylpentane	1.4	0.50 J	6.6	2.3 J
Benzene	1.4	0.36 J	4.5	1.1 J
1,2-Dichloroethane	1.4	Not Detected	5.7	Not Detected
Heptane	1.4	0.67 J	5.8	2.7 J
Trichloroethene	1.4	Not Detected	7.6	Not Detected
1,2-Dichloropropane	1.4	Not Detected	6.5	Not Detected
1,4-Dioxane	5.6	Not Detected	20	Not Detected
Bromodichloromethane	1.4	Not Detected	9.4	Not Detected
cis-1,3-Dichloropropene	1.4	Not Detected	6.4	Not Detected
4-Methyl-2-pentanone	1.4	0.38 J	5.8	[illegible]
Toluene	1.4	3.2	5.3	12
trans-1,3-Dichloropropene	1.4	Not Detected	6.4	Not Detected
1,1,2-Trichloroethane	1.4	Not Detected	7.7	Not Detected
Tetrachloroethene	1.4	Not Detected	9.6	Not Detected
2-Hexanone	5.6	0.53 J	23	2.2 J

Colegio de Químicos Licenciados de Puerto Rico
Ingeniero Químico Licenciado
Luis Infante Méndez
Licencia # 1888

eurofins | Air Toxics

Client Sample ID: B18SS-4-012617

Lab ID#: 1701477A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020609**	**Date of Collection:**	**1/26/17 5:07:00 PM**
Dil. Factor:	**2.82**	**Date of Analysis:**	**2/6/17 02:41 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.4	Not Detected	12	Not Detected
1,2-Dibromoethane (EDB)	1.4	Not Detected	11	Not Detected
Chlorobenzene	1.4	Not Detected	6.5	Not Detected
Ethyl Benzene	1.4	0.79 J	6.1	3.4 J
m,p-Xylene	1.4	2.4	6.1	10
o-Xylene	1.4	1.3 J	6.1	5.5 J
Styrene	1.4	0.17 J	6.0	0.72 J
Bromoform	1.4	Not Detected	14	Not Detected
Cumene	1.4	Not Detected	6.9	Not Detected
1,1,2,2-Tetrachloroethane	1.4	Not Detected	9.7	Not Detected
Propylbenzene	1.4	0.16 J	6.9	0.79 J
4-Ethyltoluene	1.4	0.73 J	6.9	3.6 J
1,3,5-Trimethylbenzene	1.4	0.23 J	6.9	1.1 J
1,2,4-Trimethylbenzene	1.4	0.79 J	6.9	3.9 J
1,3-Dichlorobenzene	1.4	4.0	8.5	24
1,4-Dichlorobenzene	1.4	Not Detected	8.5	Not Detected
alpha-Chlorotoluene	1.4	Not Detected	7.3	Not Detected
1,2-Dichlorobenzene	1.4	Not Detected	8.5	Not Detected
1,2,4-Trichlorobenzene	5.6	Not Detected	42	Not Detected
Hexachlorobutadiene	5.6	Not Detected	60	Not Detected
Naphthalene	2.8	Not Detected	15	Not Detected

J = Estimated value.
E = Exceeds instrument calibration range.
Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	98	70-130

COLEGIO DE QUÍMICOS DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUÍMICO LICENCIADO

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Client Sample ID: B18SS-5-012617

Lab ID#: 1701477A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020610	Date of Collection:	1/26/17 5:58:00 PM
Dil. Factor:	2.52	Date of Analysis:	2/6/17 03:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.45 J	6.2	2.2 J
Freon 114	1.3	Not Detected	8.8	Not Detected
Chloromethane	13	Not Detected	26	Not Detected
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	49	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	1.3	0.65 J	7.1	3.6 J
Ethanol	5.0	310	9.5	590
Freon 113	1.3	Not Detected	9.6	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Acetone	13	26	30	62
2-Propanol	5.0	510 E	12	1200 E
Carbon Disulfide	5.0	2.4 J	16	7.3 J
3-Chloropropene	5.0	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	44	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Hexane	1.3	0.42 J	4.4	1.5 J
1,1-Dichloroethane	1.3	Not Detected	5.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	6.7	15	20
cis-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Tetrahydrofuran	1.3	Not Detected	3.7	Not Detected
Chloroform	1.3	0.45 J	6.2	2.2 J
1,1,1-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Cyclohexane	1.3	0.26 J	4.3	0.90 J
Carbon Tetrachloride	1.3	Not Detected	7.9	Not Detected
2,2,4-Trimethylpentane	1.3	0.43 J	5.9	2.0 J
Benzene	1.3	0.24 J	4.0	0.76 J
1,2-Dichloroethane	1.3	Not Detected	5.1	Not Detected
Heptane	1.3	0.44 J	5.2	1.8 J
Trichloroethene	1.3	Not Detected	6.8	Not Detected
1,2-Dichloropropane	1.3	Not Detected	5.8	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.4	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.7	Not Detected
4-Methyl-2-pentanone	1.3	0.41 J	5.2	[illegible] J
Toluene	1.3	2.2	4.7	[illegible]
trans-1,3-Dichloropropene	1.3	Not Detected	5.7	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	6.9	Not Detected
Tetrachloroethene	1.3	Not Detected	8.5	Not Detected
2-Hexanone	5.0	0.80 J	21	3.2 J

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Client Sample ID: B18SS-5-012617

Lab ID#: 1701477A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020610**	**Date of Collection:**	**1/26/17 5:58:00 PM**
Dil. Factor:	**2.52**	**Date of Analysis:**	**2/6/17 03:08 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.7	Not Detected
Chlorobenzene	1.3	Not Detected	5.8	Not Detected
Ethyl Benzene	1.3	0.57 J	5.5	2.5 J
m,p-Xylene	1.3	1.7	5.5	7.6
o-Xylene	1.3	0.77 J	5.5	3.3 J
Styrene	1.3	Not Detected	5.4	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	Not Detected	6.2	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.6	Not Detected
Propylbenzene	1.3	0.15 J	6.2	0.72 J
4-Ethyltoluene	1.3	0.57 J	6.2	2.8 J
1,3,5-Trimethylbenzene	1.3	0.17 J	6.2	0.84 J
1,2,4-Trimethylbenzene	1.3	0.71 J	6.2	3.5 J
1,3-Dichlorobenzene	1.3	2.5	7.6	15
1,4-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
alpha-Chlorotoluene	1.3	Not Detected	6.5	Not Detected
1,2-Dichlorobenzene	1.3	Not Detected	7.6	Not Detected
1,2,4-Trichlorobenzene	5.0	Not Detected	37	Not Detected
Hexachlorobutadiene	5.0	Not Detected	54	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected

J = Estimated value.
E = Exceeds instrument calibration range.
Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	103	70-130

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

eurofins | Air Toxics

Client Sample ID: B13SS-1-012917

Lab ID#: 1701477A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020611	**Date of Collection:**	1/29/17 3:11:00 PM
Dil. Factor:	2.47	**Date of Analysis:**	2/6/17 03:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.56 J	6.1	2.8 J
Freon 114	1.2	Not Detected	8.6	Not Detected
Chloromethane	12	Not Detected	26	Not Detected
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	4.9	Not Detected	13	Not Detected
Freon 11	1.2	0.27 J	6.9	1.5 J
Ethanol	4.9	220	9.3	410
Freon 113	1.2	Not Detected	9.5	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Acetone	12	70	29	160
2-Propanol	4.9	320	12	780
Carbon Disulfide	4.9	Not Detected	15	Not Detected
3-Chloropropene	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	4.9	0.20 J	18	0.74 J
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Hexane	1.2	Not Detected	4.4	Not Detected
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.9	5.2	14	15
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Cyclohexane	1.2	Not Detected	4.2	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.8	Not Detected
2,2,4-Trimethylpentane	1.2	0.31 J	5.8	1.4 J
Benzene	1.2	0.18 J	3.9	0.58 J
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.1	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.3	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	0.30 J	5.0	[illegible]
Toluene	1.2	2.0	4.6	7.[illegible]
trans-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Tetrachloroethene	1.2	Not Detected	8.4	Not Detected
2-Hexanone	4.9	0.42 J	20	[illegible] J

Rafael Infante Méndez
Químico Licenciado

eurofins | Air Toxics

Client Sample ID: B13SS-1-012917

Lab ID#: 1701477A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020611**	**Date of Collection:**	**1/29/17 3:11:00 PM**
Dil. Factor:	**2.47**	**Date of Analysis:**	**2/6/17 03:35 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.5	Not Detected
Chlorobenzene	1.2	Not Detected	5.7	Not Detected
Ethyl Benzene	1.2	0.40 J	5.4	1.7 J
m,p-Xylene	1.2	0.89 J	5.4	3.9 J
o-Xylene	1.2	0.43 J	5.4	1.8 J
Styrene	1.2	Not Detected	5.3	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.1	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.5	Not Detected
Propylbenzene	1.2	0.13 J	6.1	0.65 J
4-Ethyltoluene	1.2	0.50 J	6.1	2.5 J
1,3,5-Trimethylbenzene	1.2	0.17 J	6.1	0.83 J
1,2,4-Trimethylbenzene	1.2	0.48 J	6.1	2.4 J
1,3-Dichlorobenzene	1.2	1.6	7.4	9.7
1,4-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.4	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	4.9	Not Detected	37	Not Detected
Hexachlorobutadiene	4.9	Not Detected	53	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	103	70-130

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
1888
QUIMICO LICENCIADO

eurofins | Air Toxics

Client Sample ID: B13SS-2-012917

Lab ID#: 1701477A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020612	Date of Collection:	1/29/17 3:55:00 PM
Dil. Factor:	5.16	Date of Analysis:	2/6/17 03:59 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.6	0.42 J	13	2.0 J
Freon 114	2.6	Not Detected	18	Not Detected
Chloromethane	26	Not Detected	53	Not Detected
Vinyl Chloride	2.6	Not Detected	6.6	Not Detected
1,3-Butadiene	2.6	Not Detected	5.7	Not Detected
Bromomethane	26	Not Detected	100	Not Detected
Chloroethane	10	Not Detected	27	Not Detected
Freon 11	2.6	Not Detected	14	Not Detected
Ethanol	10	78	19	150
Freon 113	2.6	Not Detected	20	Not Detected
1,1-Dichloroethene	2.6	Not Detected	10	Not Detected
Acetone	26	37	61	89
2-Propanol	10	110	25	280
Carbon Disulfide	10	1.5 J	32	4.7 J
3-Chloropropene	10	Not Detected	32	Not Detected
Methylene Chloride	26	Not Detected	90	Not Detected
Methyl tert-butyl ether	10	6.0 J	37	22 J
trans-1,2-Dichloroethene	2.6	Not Detected	10	Not Detected
Hexane	2.6	16	9.1	58
1,1-Dichloroethane	2.6	Not Detected	10	Not Detected
2-Butanone (Methyl Ethyl Ketone)	10	4.7 J	30	14 J
cis-1,2-Dichloroethene	2.6	Not Detected	10	Not Detected
Tetrahydrofuran	2.6	Not Detected	7.6	Not Detected
Chloroform	2.6	Not Detected	12	Not Detected
1,1,1-Trichloroethane	2.6	Not Detected	14	Not Detected
Cyclohexane	2.6	90	8.9	310
Carbon Tetrachloride	2.6	Not Detected	16	Not Detected
2,2,4-Trimethylpentane	2.6	Not Detected	12	Not Detected
Benzene	2.6	1.8 J	8.2	5.9 J
1,2-Dichloroethane	2.6	Not Detected	10	Not Detected
Heptane	2.6	2.2 J	10	8.9 J
Trichloroethene	2.6	Not Detected	14	Not Detected
1,2-Dichloropropane	2.6	Not Detected	12	Not Detected
1,4-Dioxane	10	Not Detected	37	Not Detected
Bromodichloromethane	2.6	Not Detected	17	Not Detected
cis-1,3-Dichloropropene	2.6	Not Detected	12	Not Detected
4-Methyl-2-pentanone	2.6	Not Detected	[illegible]	Not Detected
Toluene	2.6	1.6 J	9.7	6.1 J
trans-1,3-Dichloropropene	2.6	Not Detected	12	Not Detected
1,1,2-Trichloroethane	2.6	Not Detected	14	Not Detected
Tetrachloroethene	2.6	2.4 J	18	16 J
2-Hexanone	10	Not Detected	42	Not Detected

Colegio Químico Asociado de Puerto Rico
Rafael Infante Méndez
Q # 1888
Químico Licenciado

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Client Sample ID: B13SS-2-012917

Lab ID#: 1701477A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020612	**Date of Collection:**	1/29/17 3:55:00 PM
Dil. Factor:	5.16	**Date of Analysis:**	2/6/17 03:59 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.6	Not Detected	22	Not Detected
1,2-Dibromoethane (EDB)	2.6	Not Detected	20	Not Detected
Chlorobenzene	2.6	Not Detected	12	Not Detected
Ethyl Benzene	2.6	0.61 J	11	2.6 J
m,p-Xylene	2.6	1.0 J	11	4.5 J
o-Xylene	2.6	0.68 J	11	2.9 J
Styrene	2.6	Not Detected	11	Not Detected
Bromoform	2.6	Not Detected	27	Not Detected
Cumene	2.6	Not Detected	13	Not Detected
1,1,2,2-Tetrachloroethane	2.6	Not Detected	18	Not Detected
Propylbenzene	2.6	0.44 J	13	2.2 J
4-Ethyltoluene	2.6	0.44 J	13	2.2 J
1,3,5-Trimethylbenzene	2.6	0.26 J	13	1.3 J
1,2,4-Trimethylbenzene	2.6	0.63 J	13	3.1 J
1,3-Dichlorobenzene	2.6	2.0 J	16	12 J
1,4-Dichlorobenzene	2.6	0.36 J	16	2.2 J
alpha-Chlorotoluene	2.6	Not Detected	13	Not Detected
1,2-Dichlorobenzene	2.6	Not Detected	16	Not Detected
1,2,4-Trichlorobenzene	10	Not Detected	76	Not Detected
Hexachlorobutadiene	10	Not Detected	110	Not Detected
Naphthalene	5.2	Not Detected	27	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	102	70-130

ABOGADO DE PUERTO RICO
Manuel Infante Méndez
1888
QUIMICO LICENCIADO

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Client Sample ID: B13SS-2DUP-012917

Lab ID#: 1701477A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020613	Date of Collection:	1/29/17 3:55:00 PM
Dil. Factor:	4.91	Date of Analysis:	2/6/17 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.4	0.58 J	12	2.9 J
Freon 114	2.4	Not Detected	17	Not Detected
Chloromethane	24	Not Detected	51	Not Detected
Vinyl Chloride	2.4	Not Detected	6.3	Not Detected
1,3-Butadiene	2.4	Not Detected	5.4	Not Detected
Bromomethane	24	Not Detected	95	Not Detected
Chloroethane	9.8	Not Detected	26	Not Detected
Freon 11	2.4	Not Detected	14	Not Detected
Ethanol	9.8	69	18	130
Freon 113	2.4	Not Detected	19	Not Detected
1,1-Dichloroethene	2.4	Not Detected	9.7	Not Detected
Acetone	24	38	58	90
2-Propanol	9.8	110	24	270
Carbon Disulfide	9.8	Not Detected	30	Not Detected
3-Chloropropene	9.8	Not Detected	31	Not Detected
Methylene Chloride	24	Not Detected	85	Not Detected
Methyl tert-butyl ether	9.8	6.1 J	35	22 J
trans-1,2-Dichloroethene	2.4	Not Detected	9.7	Not Detected
Hexane	2.4	15	8.6	53
1,1-Dichloroethane	2.4	0.47 J	9.9	1.9 J
2-Butanone (Methyl Ethyl Ketone)	9.8	5.4 J	29	16 J
cis-1,2-Dichloroethene	2.4	Not Detected	9.7	Not Detected
Tetrahydrofuran	2.4	Not Detected	7.2	Not Detected
Chloroform	2.4	Not Detected	12	Not Detected
1,1,1-Trichloroethane	2.4	Not Detected	13	Not Detected
Cyclohexane	2.4	90	8.4	310
Carbon Tetrachloride	2.4	Not Detected	15	Not Detected
2,2,4-Trimethylpentane	2.4	Not Detected	11	Not Detected
Benzene	2.4	1.7 J	7.8	5.3 J
1,2-Dichloroethane	2.4	Not Detected	9.9	Not Detected
Heptane	2.4	2.1 J	10	8.8 J
Trichloroethene	2.4	Not Detected	13	Not Detected
1,2-Dichloropropane	2.4	Not Detected	11	Not Detected
1,4-Dioxane	9.8	Not Detected	35	Not Detected
Bromodichloromethane	2.4	Not Detected	16	Not Detected
cis-1,3-Dichloropropene	2.4	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.4	Not Detected	10	Not Detected
Toluene	2.4	1.4 J	[illegible]	5.4 J
trans-1,3-Dichloropropene	2.4	Not Detected	11	[illegible] Detected
1,1,2-Trichloroethane	2.4	Not Detected	13	[illegible] Detected
Tetrachloroethene	2.4	2.5	17	17
2-Hexanone	9.8	Not Detected	40	Not Detected

Colegio de Químicos Asociado de Puerto Rico
Rafael Infante Méndez
Licencia # 1888
Químico Licenciado

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Client Sample ID: B13SS-2DUP-012917

Lab ID#: 1701477A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020613	**Date of Collection:**	1/29/17 3:55:00 PM
Dil. Factor:	4.91	**Date of Analysis:**	2/6/17 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.4	Not Detected	21	Not Detected
1,2-Dibromoethane (EDB)	2.4	Not Detected	19	Not Detected
Chlorobenzene	2.4	Not Detected	11	Not Detected
Ethyl Benzene	2.4	0.55 J	11	2.4 J
m,p-Xylene	2.4	0.84 J	11	3.6 J
o-Xylene	2.4	0.69 J	11	3.0 J
Styrene	2.4	Not Detected	10	Not Detected
Bromoform	2.4	Not Detected	25	Not Detected
Cumene	2.4	Not Detected	12	Not Detected
1,1,2,2-Tetrachloroethane	2.4	Not Detected	17	Not Detected
Propylbenzene	2.4	0.40 J	12	2.0 J
4-Ethyltoluene	2.4	Not Detected	12	Not Detected
1,3,5-Trimethylbenzene	2.4	0.24 J	12	1.2 J
1,2,4-Trimethylbenzene	2.4	0.66 J	12	3.3 J
1,3-Dichlorobenzene	2.4	2.1 J	15	13 J
1,4-Dichlorobenzene	2.4	0.29 J	15	1.7 J
alpha-Chlorotoluene	2.4	Not Detected	13	Not Detected
1,2-Dichlorobenzene	2.4	Not Detected	15	Not Detected
1,2,4-Trichlorobenzene	9.8	Not Detected	73	Not Detected
Hexachlorobutadiene	9.8	Not Detected	100	Not Detected
Naphthalene	4.9	Not Detected	26	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: B13SS-3-012917

Lab ID#: 1701477A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020614**	**Date of Collection:**	**1/29/17 3:36:00 PM**
Dil. Factor:	**2.58**	**Date of Analysis:**	**2/6/17 04:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.3	0.62 J	6.4	3.0 J
Freon 114	1.3	Not Detected	9.0	Not Detected
Chloromethane	13	Not Detected	27	Not Detected
Vinyl Chloride	1.3	Not Detected	3.3	Not Detected
1,3-Butadiene	1.3	Not Detected	2.8	Not Detected
Bromomethane	13	Not Detected	50	Not Detected
Chloroethane	5.2	Not Detected	14	Not Detected
Freon 11	1.3	0.50 J	7.2	2.8 J
Ethanol	5.2	200	9.7	370
Freon 113	1.3	0.80 J	9.9	6.2 J
1,1-Dichloroethene	1.3	Not Detected	5.1	Not Detected
Acetone	13	92	31	220
2-Propanol	5.2	280	13	700
Carbon Disulfide	5.2	1.1 J	16	3.3 J
3-Chloropropene	5.2	Not Detected	16	Not Detected
Methylene Chloride	13	Not Detected	45	Not Detected
Methyl tert-butyl ether	5.2	1.7 J	19	6.2 J
trans-1,2-Dichloroethene	1.3	Not Detected	5.1	Not Detected
Hexane	1.3	43	4.5	150
1,1-Dichloroethane	1.3	0.42 J	5.2	1.7 J
2-Butanone (Methyl Ethyl Ketone)	5.2	4.0 J	15	12 J
cis-1,2-Dichloroethene	1.3	Not Detected	5.1	Not Detected
Tetrahydrofuran	1.3	Not Detected	3.8	Not Detected
Chloroform	1.3	Not Detected	6.3	Not Detected
1,1,1-Trichloroethane	1.3	0.68 J	7.0	3.7 J
Cyclohexane	1.3	5.4	4.4	19
Carbon Tetrachloride	1.3	Not Detected	8.1	Not Detected
2,2,4-Trimethylpentane	1.3	1.4	6.0	6.4
Benzene	1.3	0.96 J	4.1	3.1 J
1,2-Dichloroethane	1.3	Not Detected	5.2	Not Detected
Heptane	1.3	1.2 J	5.3	4.8 J
Trichloroethene	1.3	0.32 J	6.9	1.7 J
1,2-Dichloropropane	1.3	Not Detected	6.0	Not Detected
1,4-Dioxane	5.2	Not Detected	18	Not Detected
Bromodichloromethane	1.3	Not Detected	8.6	Not Detected
cis-1,3-Dichloropropene	1.3	Not Detected	5.8	Not Detected
4-Methyl-2-pentanone	1.3	0.25 J	5.3	1.0 J
Toluene	1.3	2.9	4.9	11
trans-1,3-Dichloropropene	1.3	Not Detected	[illegible]	Not Detected
1,1,2-Trichloroethane	1.3	Not Detected	7.0	[illegible] Detected
Tetrachloroethene	1.3	5.5	8.8	[illegible]37
2-Hexanone	5.2	Not Detected	21	[illegible] Detected

ASOCIADO DE PUERTO RICO
Jael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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Client Sample ID: B13SS-3-012917

Lab ID#: 1701477A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020614**	**Date of Collection:**	**1/29/17 3:36:00 PM**
Dil. Factor:	**2.58**	**Date of Analysis:**	**2/6/17 04:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.3	Not Detected	11	Not Detected
1,2-Dibromoethane (EDB)	1.3	Not Detected	9.9	Not Detected
Chlorobenzene	1.3	Not Detected	5.9	Not Detected
Ethyl Benzene	1.3	0.70 J	5.6	3.0 J
m,p-Xylene	1.3	1.7	5.6	7.4
o-Xylene	1.3	0.85 J	5.6	3.7 J
Styrene	1.3	Not Detected	5.5	Not Detected
Bromoform	1.3	Not Detected	13	Not Detected
Cumene	1.3	Not Detected	6.3	Not Detected
1,1,2,2-Tetrachloroethane	1.3	Not Detected	8.8	Not Detected
Propylbenzene	1.3	Not Detected	6.3	Not Detected
4-Ethyltoluene	1.3	0.79 J	6.3	3.9 J
1,3,5-Trimethylbenzene	1.3	0.50 J	6.3	2.5 J
1,2,4-Trimethylbenzene	1.3	0.74 J	6.3	3.6 J
1,3-Dichlorobenzene	1.3	2.8	7.8	17
1,4-Dichlorobenzene	1.3	Not Detected	7.8	Not Detected
alpha-Chlorotoluene	1.3	Not Detected	6.7	Not Detected
1,2-Dichlorobenzene	1.3	Not Detected	7.8	Not Detected
1,2,4-Trichlorobenzene	5.2	Not Detected	38	Not Detected
Hexachlorobutadiene	5.2	Not Detected	55	Not Detected
Naphthalene	2.6	Not Detected	14	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: B15SS-1-012917

Lab ID#: 1701477A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020615	Date of Collection:	1/29/17 5:55:00 PM
Dil. Factor:	2.38	Date of Analysis:	2/6/17 05:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.49 J	5.9	2.4 J
Freon 114	1.2	Not Detected	8.3	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	46	Not Detected
Chloroethane	4.8	Not Detected	12	Not Detected
Freon 11	1.2	0.22 J	6.7	1.2 J
Ethanol	4.8	65	9.0	120
Freon 113	1.2	Not Detected	9.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Acetone	12	140	28	330
2-Propanol	4.8	66	12	160
Carbon Disulfide	4.8	0.85 J	15	2.6 J
3-Chloropropene	4.8	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	41	Not Detected
Methyl tert-butyl ether	4.8	Not Detected	17	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Hexane	1.2	0.68 J	4.2	2.4 J
1,1-Dichloroethane	1.2	Not Detected	4.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.8	3.4 J	14	10 J
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.5	Not Detected
Chloroform	1.2	Not Detected	5.8	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Cyclohexane	1.2	0.38 J	4.1	1.3 J
Carbon Tetrachloride	1.2	Not Detected	7.5	Not Detected
2,2,4-Trimethylpentane	1.2	0.58 J	5.6	2.7 J
Benzene	1.2	0.19 J	3.8	0.62 J
1,2-Dichloroethane	1.2	Not Detected	4.8	Not Detected
Heptane	1.2	0.63 J	4.9	2.6 J
Trichloroethene	1.2	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.5	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	8.0	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
4-Methyl-2-pentanone	1.2	0.23 J	[illegible]	0.95 J
Toluene	1.2	2.8	[illegible]	10
trans-1,3-Dichloropropene	1.2	Not Detected	5.4	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.5	Not Detected
Tetrachloroethene	1.2	0.19 J	8.1	1.3 J
2-Hexanone	4.8	Not Detected	19	Not Detected

Colegio de Químicos Asociado de Puerto Rico
Luis Infante Méndez
1888
Químico Licenciado

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Client Sample ID: B15SS-1-012917

Lab ID#: 1701477A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020615**	**Date of Collection:**	**1/29/17 5:55:00 PM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**2/6/17 05:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.1	Not Detected
Chlorobenzene	1.2	Not Detected	5.5	Not Detected
Ethyl Benzene	1.2	0.25 J	5.2	1.1 J
m,p-Xylene	1.2	0.54 J	5.2	2.4 J
o-Xylene	1.2	0.37 J	5.2	1.6 J
Styrene	1.2	0.14 J	5.1	0.60 J
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.8	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.2	Not Detected
Propylbenzene	1.2	Not Detected	5.8	Not Detected
4-Ethyltoluene	1.2	0.43 J	5.8	2.1 J
1,3,5-Trimethylbenzene	1.2	0.11 J	5.8	0.53 J
1,2,4-Trimethylbenzene	1.2	0.42 J	5.8	2.0 J
1,3-Dichlorobenzene	1.2	2.1	7.2	13
1,4-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.2	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.2	Not Detected
1,2,4-Trichlorobenzene	4.8	Not Detected	35	Not Detected
Hexachlorobutadiene	4.8	Not Detected	51	Not Detected
Naphthalene	2.4	Not Detected	12	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	103	70-130

ABOGADO DE PUERTO RICO
Manuel Infante Méndez
1888
QUIMICO LICENCIADO

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Client Sample ID: B15SS-1DUP-012917

Lab ID#: 1701477A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a020616	Date of Collection:	1/29/17 5:55:00 PM
Dil. Factor:	2.47	Date of Analysis:	2/6/17 05:44 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	0.56 J	6.1	2.8 J
Freon 114	1.2	Not Detected	8.6	Not Detected
Chloromethane	12	Not Detected	26	Not Detected
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	4.9	Not Detected	13	Not Detected
Freon 11	1.2	0.26 J	6.9	1.4 J
Ethanol	4.9	150	9.3	280
Freon 113	1.2	Not Detected	9.5	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Acetone	12	97	29	230
2-Propanol	4.9	58	12	140
Carbon Disulfide	4.9	1.0 J	15	3.2 J
3-Chloropropene	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Hexane	1.2	Not Detected	4.4	Not Detected
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.9	5.0	14	15
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Cyclohexane	1.2	0.22 J	4.2	0.76 J
Carbon Tetrachloride	1.2	Not Detected	7.8	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.8	Not Detected
Benzene	1.2	0.25 J	3.9	0.81 J
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.1	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.3	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	0.31 J	[illegible]	1.3 J
Toluene	1.2	1.4	4.6	5.5
trans-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.7	Not Detected
Tetrachloroethene	1.2	Not Detected	8.4	Not Detected
2-Hexanone	4.9	0.78 J	20	3.2 J

ASOCIADO DE PUERTO RICO
Luis Infante Méndez
R.A. # 1888
QUÍMICO LICENCIADO

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Client Sample ID: B15SS-1DUP-012917

Lab ID#: 1701477A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a020616**	**Date of Collection:**	**1/29/17 5:55:00 PM**
Dil. Factor:	**2.47**	**Date of Analysis:**	**2/6/17 05:44 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.5	Not Detected
Chlorobenzene	1.2	Not Detected	5.7	Not Detected
Ethyl Benzene	1.2	0.14 J	5.4	0.59 J
m,p-Xylene	1.2	0.38 J	5.4	1.6 J
o-Xylene	1.2	Not Detected	5.4	Not Detected
Styrene	1.2	Not Detected	5.3	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.1	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.5	Not Detected
Propylbenzene	1.2	Not Detected	6.1	Not Detected
4-Ethyltoluene	1.2	0.23 J	6.1	1.1 J
1,3,5-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,2,4-Trimethylbenzene	1.2	0.23 J	6.1	1.1 J
1,3-Dichlorobenzene	1.2	1.0 J	7.4	6.2 J
1,4-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.4	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	4.9	Not Detected	37	Not Detected
Hexachlorobutadiene	4.9	Not Detected	53	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	103	70-130

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Méndez
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0539 of 0602

Project Manager Terry Taylor
Collected by: (Print and Sign) David Lindstrand
Company AMAJ Email
Address 2700 Winchester City Purchase State NY Zip 10577
Phone 914-251-0400 X309 Fax

Project Info:
P.O. #
Project # GMS VI Invest.
Project Name Buildings 8, 13, 15, 18 and 30

Turn Around Time: ☒ Normal ☐ Rush ____ specify

Lab Use Only
Pressurized by: JL
Date: 2/2/17
Pressurization Gas: (N2) He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	B18SS-2-012617	1L1743	1/26/17	1838	TO-15, MeOH, CH4	30	5	4.5"Hg	15psi
02A	B18SS-3-012617	00763	1/26/17	1818	TO-15, MeOH, CH4	30	5	5.0"Hg	15psi
03A	B18SS-4-012617	00882	1/26/17	1707	TO-15, MeOH, CH4	30	9	8.5"Hg	15psi
04A	B18SS-5-012617	00816	1/26/17	1758	TO-15, MeOH, CH4	30	5	6.0"Hg ~~8.5"Hg~~	15psi ~~15psi~~ J.V. 2/2/17
05A	B13SS-1-012917	N2055	1/29/17	1511	TO-15, MeOH, CH4	30	5	5.5"Hg	15psi
06A	B13SS-2-012917	1063	1/29/17	1555 ~~1605~~	TO-15, MeOH, CH4	30	5	6.5"Hg	15psi
07A	B13SS-2DUP-012917	1044	1/29/17	1555 ~~1601~~	TO-15, MeOH, CH4	30	5	5.0"Hg	15psi
08A	B13SS-3-012917	37697	1/29/17	1536 ~~1544~~	TO-15, MeOH, CH4	30	5	6.5"Hg	15psi
09A	B15SS-1-012917	37759 ~~0691~~	1/29/17	1755	TO-15, MeOH, CH4	30	5	4.5"Hg	15psi
10A	B15SS-1DUP-012917	N1955	1/29/17	1755	TO-15, MeOH, CH4	30	5	5.5"Hg	15psi

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	1700 Jan. 30, 2017	Fed EX	
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time 1/31/17
		Andrea Angustin	GATL 1020
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Canister 0691 will not be analyzed (B15SS-1-012917) Received without an initial vacuum

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No (None)	1701477

Form 1293 rev.11

EXECUTIVE NARRATIVE

SDG No:	**1701477A**	Laboratory:	**Eurofins, Folson, CA**
Analysis:	**TO-15**	Number of Samples:	**10**
Location:			

SUMMARY: Ten (10) samples were analyzed for VOCs in ambient air following Compendium Method TO-15. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: QC criteria from "Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999"; USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings: **1.** Acetone and benzene detected at the method blank analyzed on 02/06/17. Concentration detected below the reporting limit, results qualified for acetone and benzene in all samples following the Table 7 - Blank Actions for TO-15 Analysis.

2. Laboratory/field duplicate analyzed with this data package. RPD within laboratory and method performed criteria for analytes with concentration > 5 x SQL except for the cases described in the Data Review Worksheet.

Results for ethanol qualified as estimated (J) in samples 1701477A-09A/1701477A-10A due to RPD exceeding the method performance criteria.

3. Results qualified by the laboratory with an E qualifier (E - Exceeds instrument calibration range) are qualified as estimated (J).

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: March 24, 2017

TO-15 DATA SAMPLE SUMMARY

Sample ID: 1701477A-01A
Sample location: BMSMC, Humacao, PR
Sampling date: 26-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.8	ug/m^3	2.38	J	J	Yes
Freon 114	8.3	ug/m^3	2.38	-	U	Yes
Chloromethane	2.6	ug/m^3	2.38	J	J	Yes
Vinyl Chloride	3.0	ug/m^3	2.38	-	U	Yes
1,3-Butadiene	2.6	ug/m^3	2.38	-	U	Yes
Bromomethane	46	ug/m^3	2.38	-	U	Yes
Chloroethane	12	ug/m^3	2.38	-	U	Yes
Freon 11	7.5	ug/m^3	2.38	-	-	Yes
Ethanol	170	ug/m^3	2.38	-	-	Yes
Freon 113	9.1	ug/m^3	2.38	-	U	Yes
1,1-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Acetone	28	ug/m^3	2.38	J	U	Yes
2-Propanol	86	ug/m^3	2.38	-	-	Yes
Carbon Disulfide	15	ug/m^3	2.38	-	U	Yes
3-Chloropropene	15	ug/m^3	2.38	-	U	Yes
Methylene Chloride	41	ug/m^3	2.38	-	U	Yes
Methyl tert-butyl ether	17	ug/m^3	2.38	-	U	Yes
trans-1,2-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Hexane	8.4	ug/m^3	2.38	-	-	Yes
1,1-Dichloroethane	4.8	ug/m^3	2.38	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	3.1	ug/m^3	2.38	J	J	Yes
cis-1,2-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Tetrahydrofuran	3.5	ug/m^3	2.38	-	U	Yes
Chloroform	5.8	ug/m^3	2.38	-	U	Yes
1,1,1-Trichloroethane	6.5	ug/m^3	2.38	-	U	Yes
Cyclohexane	4.1	ug/m^3	2.38	-	U	Yes
Carbon Tetrachloride	7.5	ug/m^3	2.38	-	U	Yes
2,2,4-Trimethylpentane	5.6	ug/m^3	2.38	-	-	Yes
Benzene	3.8	ug/m^3	2.38	J	U	Yes
1,2-Dichloroethane	4.8	ug/m^3	2.38	-	U	Yes
Heptane	6.3	ug/m^3	2.38	-	-	Yes
Trichloroethene	6.4	ug/m^3	2.38	-	U	Yes
1,2-Dichloropropane	5.5	ug/m^3	2.38	-	U	Yes
1,4-Dioxane	17	ug/m^3	2.38	-	U	Yes
Bromodichloromethane	8.0	ug/m^3	2.38	-	U	Yes
cis-1,3-Dichloropropene	5.4	ug/m^3	2.38	-	U	Yes

4-Methyl-2-pentanone	4.9	ug/m^3	2.38	-	U	Yes
Toluene	3.0	ug/m^3	2.38	J	J	Yes
trans-1,3-Dichloropropene	5.4	ug/m^3	2.38	-	U	Yes
1,1,2-Trichloroethane	6.5	ug/m^3	2.38	-	U	Yes
Tetrachloroethene	8.1	ug/m^3	2.38	-	U	Yes
2-Hexanone	19	ug/m^3	2.38	-	U	Yes
Dibromochloromethane	10	ug/m^3	2.38	-	U	Yes
1,2-Dibromoethane (EDB)	9.1	ug/m^3	2.38	-	U	Yes
Chlorobenzene	5.5	ug/m^3	2.38	-	U	Yes
Ethyl Benzene	5.2	ug/m^3	2.38	-	U	Yes
m,p-Xylene	1.4	ug/m^3	2.38	J	J	Yes
o-Xylene	5.2	ug/m^3	2.38	-	U	Yes
Styrene	5.1	ug/m^3	2.38	-	U	Yes
Bromoform	12	ug/m^3	2.38	-	U	Yes
Cumene	5.8	ug/m^3	2.38	-	U	Yes
1,1,2,2-Tetrachloroethane	8.2	ug/m^3	2.38	-	U	Yes
Propylbenzene	5.8	ug/m^3	2.38	-	U	Yes
4-Ethyltoluene	5.8	ug/m^3	2.38	-	U	Yes
1,3,5-Trimethylbenzene	5.8	ug/m^3	2.38	-	U	Yes
1,2,4-Trimethylbenzene	5.8	ug/m^3	2.38	-	U	Yes
1,3-Dichlorobenzene	7.2	ug/m^3	2.38	-	U	Yes
1,4-Dichlorobenzene	7.2	ug/m^3	2.38	-	U	Yes
alpha-Chlorotoluene	6.2	ug/m^3	2.38	-	U	Yes
1,2-Dichlorobenzene	7.2	ug/m^3	2.38	-	U	Yes
1,2,4-Trichlorobenzene	35	ug/m^3	2.38	-	U	Yes
Hexachlorobutadiene	51	ug/m^3	2.38	-	U	Yes
Naphthalene	12	ug/m^3	2.38	-	U	Yes

Sample ID: 1701477A-02A
Sample location: BMSMC, Humacao, PR
Sampling date: 24-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.6	ug/m^3	2.42	-	U	Yes
Freon 114	8.4	ug/m^3	2.42	-	U	Yes
Chloromethane	25	ug/m^3	2.42	-	U	Yes
Vinyl Chloride	3.1	ug/m^3	2.42	-	U	Yes
1,3-Butadiene	2.7	ug/m^3	2.42	-	U	Yes
Bromomethane	47	ug/m^3	2.42	-	U	Yes
Chloroethane	13	ug/m^3	2.42	-	U	Yes
Freon 11	2.2	ug/m^3	2.42	J	J	Yes
Ethanol	540	ug/m^3	2.42	-	-	Yes
Freon 113	9.3	ug/m^3	2.42	-	U	Yes
1,1-Dichloroethene	4.8	ug/m^3	2.42	-	U	Yes
Acetone	170	ug/m^3	2.42	-	-	Yes
2-Propanol	950	ug/m^3	2.42	-	-	Yes
Carbon Disulfide	3.0	ug/m^3	2.42	J	J	Yes
3-Chloropropene	15	ug/m^3	2.42	-	U	Yes
Methylene Chloride	42	ug/m^3	2.42	-	U	Yes
Methyl tert-butyl ether	17	ug/m^3	2.42	-	U	Yes
trans-1,2-Dichloroethene	4.8	ug/m^3	2.42	-	U	Yes
Hexane	1.5	ug/m^3	2.42	J	J	Yes
1,1-Dichloroethane	4.9	ug/m^3	2.42	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	23	ug/m^3	2.42	-	-	Yes
cis-1,2-Dichloroethene	4.8	ug/m^3	2.42	-	U	Yes
Tetrahydrofuran	3.6	ug/m^3	2.42	-	U	Yes
Chloroform	5.9	ug/m^3	2.42	-	U	Yes
1,1,1-Trichloroethane	6.6	ug/m^3	2.42	-	U	Yes
Cyclohexane	4.2	ug/m^3	2.42	-	U	Yes
Carbon Tetrachloride	7.6	ug/m^3	2.42	-	U	Yes
2,2,4-Trimethylpentane	1.9	ug/m^3	2.42	J	J	Yes
Benzene	3.9	ug/m^3	2.42	J	U	Yes
1,2-Dichloroethane	4.9	ug/m^3	2.42	-	U	Yes
Heptane	1.9	ug/m^3	2.42	J	J	Yes
Trichloroethene	6.5	ug/m^3	2.42	-	U	Yes
1,2-Dichloropropane	5.6	ug/m^3	2.42	-	U	Yes
1,4-Dioxane	17	ug/m^3	2.42	-	U	Yes
Bromodichloromethane	8.1	ug/m^3	2.42	-	U	Yes
cis-1,3-Dichloropropene	5.5	ug/m^3	2.42	-	U	Yes
4-Methyl-2-pentanone	1.3	ug/m^3	2.42	J	J	Yes
Toluene	8.2	ug/m^3	2.42	-	-	Yes

trans-1,3-Dichloropropene	5.5	ug/m^3	2.42	-	U	Yes
1,1,2-Trichloroethane	6.6	ug/m^3	2.42	-	U	Yes
Tetrachloroethene	8.2	ug/m^3	2.42	-	U	Yes
2-Hexanone	3.1	ug/m^3	2.42	J	J	Yes
Dibromochloromethane	10	ug/m^3	2.42	-	U	Yes
1,2-Dibromoethane (EDB)	9.3	ug/m^3	2.42	-	U	Yes
Chlorobenzene	5.6	ug/m^3	2.42	-	U	Yes
Ethyl Benzene	1.8	ug/m^3	2.42	J	J	Yes
m,p-Xylene	4.9	ug/m^3	2.42	J	J	Yes
o-Xylene	2.2	ug/m^3	2.42	J	J	Yes
Styrene	5.2	ug/m^3	2.42	-	U	Yes
Bromoform	12	ug/m^3	2.42	-	U	Yes
Cumene	5.9	ug/m^3	2.42	-	U	Yes
1,1,2,2-Tetrachloroethane	8.3	ug/m^3	2.42	-	U	Yes
Propylbenzene	5.9	ug/m^3	2.42	-	U	Yes
4-Ethyltoluene	5.9	ug/m^3	2.42	-	U	Yes
1,3,5-Trimethylbenzene	5.9	ug/m^3	2.42	-	U	Yes
1,2,4-Trimethylbenzene	5.9	ug/m^3	2.42	-	U	Yes
1,3-Dichlorobenzene	7.3	ug/m^3	2.42	-	U	Yes
1,4-Dichlorobenzene	7.3	ug/m^3	2.42	-	U	Yes
alpha-Chlorotoluene	6.3	ug/m^3	2.42	-	U	Yes
1,2-Dichlorobenzene	7.3	ug/m^3	2.42	-	U	Yes
1,2,4-Trichlorobenzene	36	ug/m^3	2.42	-	U	Yes
Hexachlorobutadiene	52	ug/m^3	2.42	-	U	Yes
Naphthalene	13	ug/m^3	2.42	-	U	Yes

Sample ID: 1701477A-03A
Sample location: BMSMC, Humacao, PR
Sampling date: 26-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.8	ug/m^3	2.82	J	J	Yes
Freon 114	9.8	ug/m^3	2.82	-	U	Yes
Chloromethane	29	ug/m^3	2.82	-	U	Yes
Vinyl Chloride	3.6	ug/m^3	2.82	-	U	Yes
1,3-Butadiene	3.1	ug/m^3	2.82	-	U	Yes
Bromomethane	55	ug/m^3	2.82	-	U	Yes
Chloroethane	15	ug/m^3	2.82	-	U	Yes
Freon 11	1.9	ug/m^3	2.82	J	J	Yes
Ethanol	780	ug/m^3	2.82	-	-	Yes
Freon 113	11	ug/m^3	2.82	-	U	Yes
1,1-Dichloroethene	5.6	ug/m^3	2.82	-	U	Yes
Acetone	59	ug/m^3	2.82	-	U	Yes
2-Propanol	1600	ug/m^3	2.82	E	J	Yes
Carbon Disulfide	18	ug/m^3	2.82	J	J	Yes
3-Chloropropene	18	ug/m^3	2.82	-	U	Yes
Methylene Chloride	49	ug/m^3	2.82	-	U	Yes
Methyl tert-butyl ether	20	ug/m^3	2.82	-	U	Yes
trans-1,2-Dichloroethene	5.6	ug/m^3	2.82	-	U	Yes
Hexane	2.0	ug/m^3	2.82	J	J	Yes
1,1-Dichloroethane	5.7	ug/m^3	2.82	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	18	ug/m^3	2.82	-	-	Yes
cis-1,2-Dichloroethene	5.6	ug/m^3	2.82	-	U	Yes
Tetrahydrofuran	4.2	ug/m^3	2.82	-	U	Yes
Chloroform	6.90	ug/m^3	2.82	-	U	Yes
1,1,1-Trichloroethane	7.7	ug/m^3	2.82	-	U	Yes
Cyclohexane	1.2	ug/m^3	2.82	J	J	Yes
Carbon Tetrachloride	8.9	ug/m^3	2.82	-	U	Yes
2,2,4-Trimethylpentane	2.3	ug/m^3	2.82	J	J	Yes
Benzene	4.5	ug/m^3	2.82	J	U	Yes
1,2-Dichloroethane	5.7	ug/m^3	2.82	-	U	Yes
Heptane	2.7	ug/m^3	2.82	J	J	Yes
Trichloroethene	7.6	ug/m^3	2.82	-	U	Yes
1,2-Dichloropropane	6.5	ug/m^3	2.82	-	U	Yes
1,4-Dioxane	20	ug/m^3	2.82	-	U	Yes
Bromodichloromethane	9.4	ug/m^3	2.82	-	U	Yes
cis-1,3-Dichloropropene	6.4	ug/m^3	2.82	-	U	Yes
4-Methyl-2-pentanone	1.5	ug/m^3	2.82	J	J	Yes
Toluene	12	ug/m^3	2.82	-	-	Yes

trans-1,3-Dichloropropene	6.4	ug/m^3	2.82	-	U	Yes
1,1,2-Trichloroethane	7.7	ug/m^3	2.82	-	U	Yes
Tetrachloroethene	9.6	ug/m^3	2.82	-	U	Yes
2-Hexanone	23	ug/m^3	2.82	-	U	Yes
Dibromochloromethane	12	ug/m^3	2.82	-	U	Yes
1,2-Dibromoethane (EDB)	11	ug/m^3	2.82	-	U	Yes
Chlorobenzene	6.5	ug/m^3	2.82	-	U	Yes
Ethyl Benzene	3.4	ug/m^3	2.82	J	J	Yes
m,p-Xylene	10	ug/m^3	2.82	-	-	Yes
o-Xylene	5.5	ug/m^3	2.82	J	J	Yes
Styrene	0.72	ug/m^3	2.82	J	J	Yes
Bromoform	14	ug/m^3	2.82	-	U	Yes
Cumene	6.9	ug/m^3	2.82	-	U	Yes
1,1,2,2-Tetrachloroethane	9.7	ug/m^3	2.82	-	U	Yes
Propylbenzene	0.79	ug/m^3	2.82	J	J	Yes
4-Ethyltoluene	3.6	ug/m^3	2.82	J	J	Yes
1,3,5-Trimethylbenzene	1.1	ug/m^3	2.82	J	J	Yes
1,2,4-Trimethylbenzene	3.9	ug/m^3	2.82	J	J	Yes
1,3-Dichlorobenzene	24	ug/m^3	2.82	-	-	Yes
1,4-Dichlorobenzene	8.5	ug/m^3	2.82	-	U	Yes
alpha-Chlorotoluene	7.3	ug/m^3	2.82	-	U	Yes
1,2-Dichlorobenzene	8.5	ug/m^3	2.82	-	U	Yes
1,2,4-Trichlorobenzene	42	ug/m^3	2.82	-	U	Yes
Hexachlorobutadiene	60	ug/m^3	2.82	-	U	Yes
Naphthalene	15	ug/m^3	2.82	-	U	Yes

Sample ID: 1701477A-04A
Sample location: BMSMC, Humacao, PR
Sampling date: 26-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.2	ug/m^3	2.52	J	J	Yes
Freon 114	8.8	ug/m^3	2.52	-	U	Yes
Chloromethane	26	ug/m^3	2.52	-	U	Yes
Vinyl Chloride	3.2	ug/m^3	2.52	-	U	Yes
1,3-Butadiene	2.8	ug/m^3	2.52	-	U	Yes
Bromomethane	49	ug/m^3	2.52	-	U	Yes
Chloroethane	13	ug/m^3	2.52	-	U	Yes
Freon 11	3.6	ug/m^3	2.52	J	J	Yes
Ethanol	590	ug/m^3	2.52	-	-	Yes
Freon 113	9.6	ug/m^3	2.52	-	U	Yes
1,1-Dichloroethene	5.0	ug/m^3	2.52	-	U	Yes
Acetone	62	ug/m^3	2.52	-	U	Yes
2-Propanol	1200	ug/m^3	2.52	E	J	Yes
Carbon Disulfide	7.3	ug/m^3	2.52	J	J	Yes
3-Chloropropene	16	ug/m^3	2.52	-	U	Yes
Methylene Chloride	44	ug/m^3	2.52	-	U	Yes
Methyl tert-butyl ether	18	ug/m^3	2.52	-	U	Yes
trans-1,2-Dichloroethene	5.0	ug/m^3	2.52	-	U	Yes
Hexane	1.5	ug/m^3	2.52	J	J	Yes
1,1-Dichloroethane	5.1	ug/m^3	2.52	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	20	ug/m^3	2.52	-	-	Yes
cis-1,2-Dichloroethene	5.0	ug/m^3	2.52	-	U	Yes
Tetrahydrofuran	3.7	ug/m^3	2.52	-	-	Yes
Chloroform	2.2	ug/m^3	2.52	J	J	Yes
1,1,1-Trichloroethane	6.9	ug/m^3	2.52	-	U	Yes
Cyclohexane	0.90	ug/m^3	2.52	J	J	Yes
Carbon Tetrachloride	7.9	ug/m^3	2.52	-	U	Yes
2,2,4-Trimethylpentane	2.0	ug/m^3	2.52	J	J	Yes
Benzene	4.0	ug/m^3	2.52	J	U	Yes
1,2-Dichloroethane	5.1	ug/m^3	2.52	-	U	Yes
Heptane	1.8	ug/m^3	2.52	J	J	Yes
Trichloroethene	6.8	ug/m^3	2.52	-	U	Yes
1,2-Dichloropropane	5.8	ug/m^3	2.52	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.52	-	U	Yes
Bromodichloromethane	8.4	ug/m^3	2.52	-	U	Yes
cis-1,3-Dichloropropene	5.7	ug/m^3	2.52	-	U	Yes
4-Methyl-2-pentanone	1.7	ug/m^3	2.52	J	J	Yes
Toluene	8.1	ug/m^3	2.52	-	-	Yes

trans-1,3-Dichloropropene	5.7	ug/m^3	2.52	-	-	Yes
1,1,2-Trichloroethane	6.9	ug/m^3	2.52	-	U	Yes
Tetrachloroethene	8.5	ug/m^3	2.52	-	U	Yes
2-Hexanone	3.2	ug/m^3	2.52	J	J	Yes
Dibromochloromethane	11	ug/m^3	2.52	-	U	Yes
1,2-Dibromoethane (EDB)	9.7	ug/m^3	2.52	-	U	Yes
Chlorobenzene	5.8	ug/m^3	2.52	-	U	Yes
Ethyl Benzene	2.5	ug/m^3	2.52	J	J	Yes
m,p-Xylene	7.6	ug/m^3	2.52	-	-	Yes
o-Xylene	3.3	ug/m^3	2.52	J	J	Yes
Styrene	5.4	ug/m^3	2.52	-	U	Yes
Bromoform	13	ug/m^3	2.52	-	U	Yes
Cumene	6.2	ug/m^3	2.52	-	U	Yes
1,1,2,2-Tetrachloroethane	8.6	ug/m^3	2.52	-	U	Yes
Propylbenzene	0.72	ug/m^3	2.52	J	J	Yes
4-Ethyltoluene	2.8	ug/m^3	2.52	J	J	Yes
1,3,5-Trimethylbenzene	0.84	ug/m^3	2.52	J	J	Yes
1,2,4-Trimethylbenzene	3.5	ug/m^3	2.52	J	J	Yes
1,3-Dichlorobenzene	15	ug/m^3	2.52	-	-	Yes
1,4-Dichlorobenzene	7.6	ug/m^3	2.52	-	U	Yes
alpha-Chlorotoluene	6.5	ug/m^3	2.52	-	U	Yes
1,2-Dichlorobenzene	7.6	ug/m^3	2.52	-	U	Yes
1,2,4-Trichlorobenzene	37	ug/m^3	2.52	-	U	Yes
Hexachlorobutadiene	54	ug/m^3	2.52	-	U	Yes
Naphthalene	13	ug/m^3	2.52	-	U	Yes

Sample ID: 1701477A-05A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.8	ug/m^3	2.47	J	J	Yes
Freon 114	8.6	ug/m^3	2.47	-	U	Yes
Chloromethane	26	ug/m^3	2.47	-	U	Yes
Vinyl Chloride	3.2	ug/m^3	2.47	-	U	Yes
1,3-Butadiene	2.7	ug/m^3	2.47	-	U	Yes
Bromomethane	48	ug/m^3	2.47	-	U	Yes
Chloroethane	13	ug/m^3	2.47	-	U	Yes
Freon 11	1.5	ug/m^3	2.47	J	J	Yes
Ethanol	410	ug/m^3	2.47	-	-	Yes
Freon 113	9.5	ug/m^3	2.47	-	U	Yes
1,1-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Acetone	160	ug/m^3	2.47	-	-	Yes
2-Propanol	780	ug/m^3	2.47	-	-	Yes
Carbon Disulfide	15	ug/m^3	2.47	-	U	Yes
3-Chloropropene	15	ug/m^3	2.47	-	U	Yes
Methylene Chloride	43	ug/m^3	2.47	-	U	Yes
Methyl tert-butyl ether	18	ug/m^3	2.47	-	U	Yes
trans-1,2-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Hexane	4.4	ug/m^3	2.47	-	U	Yes
1,1-Dichloroethane	4.9	ug/m^3	2.47	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	15	ug/m^3	2.47	-	-	Yes
cis-1,2-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Tetrahydrofuran	3.6	ug/m^3	2.47	-	U	Yes
Chloroform	6.0	ug/m^3	2.47	-	U	Yes
1,1,1-Trichloroethane	6.7	ug/m^3	2.47	-	U	Yes
Cyclohexane	4.2	ug/m^3	2.47	-	U	Yes
Carbon Tetrachloride	7.8	ug/m^3	2.47	-	U	Yes
2,2,4-Trimethylpentane	1.4	ug/m^3	2.47	J	J	Yes
Benzene	3.9	ug/m^3	2.47	J	U	Yes
1,2-Dichloroethane	5.0	ug/m^3	2.47	-	U	Yes
Heptane	5.1	ug/m^3	2.47	-	U	Yes
Trichloroethene	6.6	ug/m^3	2.47	-	U	Yes
1,2-Dichloropropane	5.7	ug/m^3	2.47	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.47	-	U	Yes
Bromodichloromethane	8.3	ug/m^3	2.47	-	U	Yes
cis-1,3-Dichloropropene	5.6	ug/m^3	2.47	-	U	Yes
4-Methyl-2-pentanone	1.2	ug/m^3	2.47	J	J	Yes
Toluene	7.6	ug/m^3	2.47	-	-	Yes

trans-1,3-Dichloropropene	5.6	ug/m^3	2.47	-	U	Yes
1,1,2-Trichloroethane	6.7	ug/m^3	2.47	-	U	Yes
Tetrachloroethene	8.4	ug/m^3	2.47	-	U	Yes
2-Hexanone	1.7	ug/m^3	2.47	J	J	Yes
Dibromochloromethane	10	ug/m^3	2.47	-	U	Yes
1,2-Dibromoethane (EDB)	9.5	ug/m^3	2.47	-	U	Yes
Chlorobenzene	5.7	ug/m^3	2.47	-	U	Yes
Ethyl Benzene	1.7	ug/m^3	2.47	J	J	Yes
m,p-Xylene	3.9	ug/m^3	2.47	J	J	Yes
o-Xylene	1.8	ug/m^3	2.47	J	J	Yes
Styrene	5.3	ug/m^3	2.47	-	U	Yes
Bromoform	13	ug/m^3	2.47	-	U	Yes
Cumene	6.1	ug/m^3	2.47	-	U	Yes
1,1,2,2-Tetrachloroethane	8.5	ug/m^3	2.47	-	U	Yes
Propylbenzene	0.65	ug/m^3	2.47	J	J	Yes
4-Ethyltoluene	2.5	ug/m^3	2.47	J	J	Yes
1,3,5-Trimethylbenzene	0.83	ug/m^3	2.47	J	J	Yes
1,2,4-Trimethylbenzene	2.4	ug/m^3	2.47	J	J	Yes
1,3-Dichlorobenzene	9.7	ug/m^3	2.47	-	-	Yes
1,4-Dichlorobenzene	7.4	ug/m^3	2.47	-	U	Yes
alpha-Chlorotoluene	6.4	ug/m^3	2.47	-	U	Yes
1,2-Dichlorobenzene	7.4	ug/m^3	2.47	-	U	Yes
1,2,4-Trichlorobenzene	37	ug/m^3	2.47	-	U	Yes
Hexachlorobutadiene	53	ug/m^3	2.47	-	U	Yes
Naphthalene	13	ug/m^3	2.47	-	U	Yes

Sample ID: 1701477A-06A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.0	ug/m^3	5.16	J	J	Yes
Freon 114	18	ug/m^3	5.16	-	U	Yes
Chloromethane	53	ug/m^3	5.16	-	U	Yes
Vinyl Chloride	6.6	ug/m^3	5.16	-	U	Yes
1,3-Butadiene	5.7	ug/m^3	5.16	-	U	Yes
Bromomethane	100	ug/m^3	5.16	-	U	Yes
Chloroethane	27	ug/m^3	5.16	-	U	Yes
Freon 11	14	ug/m^3	5.16	-	U	Yes
Ethanol	150	ug/m^3	5.16	-	-	Yes
Freon 113	20	ug/m^3	5.16	-	U	Yes
1,1-Dichloroethene	10	ug/m^3	5.16	-	U	Yes
Acetone	89	ug/m^3	5.16	-	U	Yes
2-Propanol	280	ug/m^3	5.16	-	-	Yes
Carbon Disulfide	4.7	ug/m^3	5.16	J	J	Yes
3-Chloropropene	32	ug/m^3	5.16	-	U	Yes
Methylene Chloride	90	ug/m^3	5.16	-	U	Yes
Methyl tert-butyl ether	22	ug/m^3	5.16	J	J	Yes
trans-1,2-Dichloroethene	10	ug/m^3	5.16	-	U	Yes
Hexane	58	ug/m^3	5.16	-	-	Yes
1,1-Dichloroethane	10	ug/m^3	5.16	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	14	ug/m^3	5.16	J	J	Yes
cis-1,2-Dichloroethene	10	ug/m^3	5.16	-	U	Yes
Tetrahydrofuran	7.6	ug/m^3	5.16	-	U	Yes
Chloroform	12	ug/m^3	5.16	-	U	Yes
1,1,1-Trichloroethane	14	ug/m^3	5.16	-	U	Yes
Cyclohexane	390	ug/m^3	5.16	-	U	Yes
Carbon Tetrachloride	16	ug/m^3	5.16	-	U	Yes
2,2,4-Trimethylpentane	12	ug/m^3	5.16	-	-	Yes
Benzene	8.9	ug/m^3	5.16	J	U	Yes
1,2-Dichloroethane	10	ug/m^3	5.16	-	U	Yes
Heptane	8.9	ug/m^3	5.16	J	J	Yes
Trichloroethene	14	ug/m^3	5.16	-	U	Yes
1,2-Dichloropropane	12	ug/m^3	5.16	-	U	Yes
1,4-Dioxane	37	ug/m^3	5.16	-	U	Yes
Bromodichloromethane	17	ug/m^3	5.16	-	U	Yes
cis-1,3-Dichloropropene	12	ug/m^3	5.16	-	U	Yes
4-Methyl-2-pentanone	10	ug/m^3	5.16	-	U	Yes
Toluene	6.1	ug/m^3	5.16	J	J	Yes

trans-1,3-Dichloropropene	12	ug/m^3	5.16	-	U	Yes
1,1,2-Trichloroethane	14	ug/m^3	5.16	-	U	Yes
Tetrachloroethene	16	ug/m^3	5.16	J	J	Yes
2-Hexanone	42	ug/m^3	5.16	-	U	Yes
Dibromochloromethane	22	ug/m^3	5.16	-	U	Yes
1,2-Dibromoethane (EDB)	20	ug/m^3	5.16	-	U	Yes
Chlorobenzene	12	ug/m^3	5.16	-	U	Yes
Ethyl Benzene	2.6	ug/m^3	5.16	J	J	Yes
m,p-Xylene	4.5	ug/m^3	5.16	J	J	Yes
o-Xylene	2.9	ug/m^3	5.16	J	J	Yes
Styrene	11	ug/m^3	5.16	-	U	Yes
Bromoform	27	ug/m^3	5.16	-	U	Yes
Cumene	13	ug/m^3	5.16	-	U	Yes
1,1,2,2-Tetrachloroethane	18	ug/m^3	5.16	-	U	Yes
Propylbenzene	2.2	ug/m^3	5.16	J	J	Yes
4-Ethyltoluene	2.2	ug/m^3	5.16	J	J	Yes
1,3,5-Trimethylbenzene	1.3	ug/m^3	5.16	J	J	Yes
1,2,4-Trimethylbenzene	3.1	ug/m^3	5.16	J	J	Yes
1,3-Dichlorobenzene	12	ug/m^3	5.16	J	J	Yes
1,4-Dichlorobenzene	2.2	ug/m^3	5.16	J	J	Yes
alpha-Chlorotoluene	13	ug/m^3	5.16	-	U	Yes
1,2-Dichlorobenzene	16	ug/m^3	5.16	-	U	Yes
1,2,4-Trichlorobenzene	76	ug/m^3	5.16	-	U	Yes
Hexachlorobutadiene	110	ug/m^3	5.16	-	U	Yes
Naphthalene	27	ug/m^3	5.16	-	U	Yes

Sample ID: 1701477A-07A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.9	ug/m^3	4.91	J	J	Yes
Freon 114	17	ug/m^3	4.91	-	U	Yes
Chloromethane	51	ug/m^3	4.91	-	U	Yes
Vinyl Chloride	6.3	ug/m^3	4.91	-	U	Yes
1,3-Butadiene	5.4	ug/m^3	4.91	-	U	Yes
Bromomethane	95	ug/m^3	4.91	-	U	Yes
Chloroethane	26	ug/m^3	4.91	-	U	Yes
Freon 11	14	ug/m^3	4.91	-	U	Yes
Ethanol	130	ug/m^3	4.91	-	-	Yes
Freon 113	19	ug/m^3	4.91	-	U	Yes
1,1-Dichloroethene	9.7	ug/m^3	4.91	-	U	Yes
Acetone	90	ug/m^3	4.91	-	U	Yes
2-Propanol	270	ug/m^3	4.91	-	-	Yes
Carbon Disulfide	30	ug/m^3	4.91	J	J	Yes
3-Chloropropene	31	ug/m^3	4.91	-	U	Yes
Methylene Chloride	85	ug/m^3	4.91	-	U	Yes
Methyl tert-butyl ether	22	ug/m^3	4.91	J	J	Yes
trans-1,2-Dichloroethene	9.7	ug/m^3	4.91	-	U	Yes
Hexane	53	ug/m^3	4.91	-	-	Yes
1,1-Dichloroethane	1.9	ug/m^3	4.91	J	J	Yes
2-Butanone (Methyl Ethyl Ketone)	16	ug/m^3	4.91	J	J	Yes
cis-1,2-Dichloroethene	9.7	ug/m^3	4.91	-	U	Yes
Tetrahydrofuran	7.2	ug/m^3	4.91	-	U	Yes
Chloroform	12	ug/m^3	4.91	-	U	Yes
1,1,1-Trichloroethane	13	ug/m^3	4.91	-	U	Yes
Cyclohexane	310	ug/m^3	4.91	-	U	Yes
Carbon Tetrachloride	15	ug/m^3	4.91	-	U	Yes
2,2,4-Trimethylpentane	11	ug/m^3	4.91	-	-	Yes
Benzene	7.8	ug/m^3	4.91	J	U	Yes
1,2-Dichloroethane	9.9	ug/m^3	4.91	-	U	Yes
Heptane	8.8	ug/m^3	4.91	J	J	Yes
Trichloroethene	13	ug/m^3	4.91	-	U	Yes
1,2-Dichloropropane	11	ug/m^3	4.91	-	U	Yes
1,4-Dioxane	35	ug/m^3	4.91	-	U	Yes
Bromodichloromethane	16	ug/m^3	4.91	-	U	Yes
cis-1,3-Dichloropropene	11	ug/m^3	4.91	-	U	Yes
4-Methyl-2-pentanone	10	ug/m^3	4.91	-	U	Yes
Toluene	5.4	ug/m^3	4.91	J	J	Yes

trans-1,3-Dichloropropene	11	ug/m^3	4.91	-	U	Yes
1,1,2-Trichloroethane	13	ug/m^3	4.91	-	U	Yes
Tetrachloroethene	17	ug/m^3	4.91	-	-	Yes
2-Hexanone	40	ug/m^3	4.91	-	U	Yes
Dibromochloromethane	21	ug/m^3	4.91	-	U	Yes
1,2-Dibromoethane (EDB)	19	ug/m^3	4.91	-	U	Yes
Chlorobenzene	11	ug/m^3	4.91	-	U	Yes
Ethyl Benzene	2.4	ug/m^3	4.91	J	J	Yes
m,p-Xylene	3.6	ug/m^3	4.91	J	J	Yes
o-Xylene	3.0	ug/m^3	4.91	J	J	Yes
Styrene	10	ug/m^3	4.91	-	U	Yes
Bromoform	25	ug/m^3	4.91	-	U	Yes
Cumene	12	ug/m^3	4.91	-	U	Yes
1,1,2,2-Tetrachloroethane	17	ug/m^3	4.91	-	U	Yes
Propylbenzene	2.0	ug/m^3	4.91	J	J	Yes
4-Ethyltoluene	12	ug/m^3	4.91	-	U	Yes
1,3,5-Trimethylbenzene	1.2	ug/m^3	4.91	J	J	Yes
1,2,4-Trimethylbenzene	3.3	ug/m^3	4.91	J	J	Yes
1,3-Dichlorobenzene	13	ug/m^3	4.91	J	J	Yes
1,4-Dichlorobenzene	1.7	ug/m^3	4.91	J	J	Yes
alpha-Chlorotoluene	13	ug/m^3	4.91	-	U	Yes
1,2-Dichlorobenzene	15	ug/m^3	4.91	-	U	Yes
1,2,4-Trichlorobenzene	73	ug/m^3	4.91	-	U	Yes
Hexachlorobutadiene	100	ug/m^3	4.91	-	U	Yes
Naphthalene	26	ug/m^3	4.91	-	U	Yes

Sample ID: 1701477A-08A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	3.0	ug/m^3	2.58	J	J	Yes
Freon 114	9.0	ug/m^3	2.58	-	U	Yes
Chloromethane	27	ug/m^3	2.58	-	U	Yes
Vinyl Chloride	3.3	ug/m^3	2.58	-	U	Yes
1,3-Butadiene	2.8	ug/m^3	2.58	-	U	Yes
Bromomethane	50	ug/m^3	2.58	-	U	Yes
Chloroethane	14	ug/m^3	2.58	-	U	Yes
Freon 11	2.8	ug/m^3	2.58	J	J	Yes
Ethanol	370	ug/m^3	2.58	-	-	Yes
Freon 113	6.2	ug/m^3	2.58	J	J	Yes
1,1-Dichloroethene	5.1	ug/m^3	2.58	-	U	Yes
Acetone	220	ug/m^3	2.58	-	-	Yes
2-Propanol	700	ug/m^3	2.58	-	-	Yes
Carbon Disulfide	3.3	ug/m^3	2.58	J	J	Yes
3-Chloropropene	16	ug/m^3	2.58	-	U	Yes
Methylene Chloride	45	ug/m^3	2.58	-	U	Yes
Methyl tert-butyl ether	19	ug/m^3	2.58	-	U	Yes
trans-1,2-Dichloroethene	5.1	ug/m^3	2.58	-	U	Yes
Hexane	150	ug/m^3	2.58	-	-	Yes
1,1-Dichloroethane	1.7	ug/m^3	2.58	J	J	Yes
2-Butanone (Methyl Ethyl Ketone)	12	ug/m^3	2.58	J	J	Yes
cis-1,2-Dichloroethene	5.1	ug/m^3	2.58	-	U	Yes
Tetrahydrofuran	3.8	ug/m^3	2.58	-	U	Yes
Chloroform	6.3	ug/m^3	2.58	-	U	Yes
1,1,1-Trichloroethane	3.7	ug/m^3	2.58	J	J	Yes
Cyclohexane	19	ug/m^3	2.58	-	-	Yes
Carbon Tetrachloride	8.1	ug/m^3	2.58	-	U	Yes
2,2,4-Trimethylpentane	6.4	ug/m^3	2.58	-	-	Yes
Benzene	4.1	ug/m^3	2.58	J	U	Yes
1,2-Dichloroethane	5.2	ug/m^3	2.58	-	U	Yes
Heptane	4.8	ug/m^3	2.58	J	J	Yes
Trichloroethene	1.7	ug/m^3	2.58	J	J	Yes
1,2-Dichloropropane	6.0	ug/m^3	2.58	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.58	-	U	Yes
Bromodichloromethane	8.6	ug/m^3	2.58	-	U	Yes
cis-1,3-Dichloropropene	5.8	ug/m^3	2.58	-	U	Yes
4-Methyl-2-pentanone	1.0	ug/m^3	2.58	J	J	Yes
Toluene	11	ug/m^3	2.58	-	-	Yes

trans-1,3-Dichloropropene	5.8	ug/m^3	2.58	-	U	Yes
1,1,2-Trichloroethane	7.0	ug/m^3	2.58	-	U	Yes
Tetrachloroethene	37	ug/m^3	2.58	-	-	Yes
2-Hexanone	21	ug/m^3	2.58	-	U	Yes
Dibromochloromethane	11	ug/m^3	2.58	-	U	Yes
1,2-Dibromoethane (EDB)	9.9	ug/m^3	2.58	-	U	Yes
Chlorobenzene	5.9	ug/m^3	2.58	-	U	Yes
Ethyl Benzene	3.0	ug/m^3	2.58	J	J	Yes
m,p-Xylene	7.4	ug/m^3	2.58	-	-	Yes
o-Xylene	3.7	ug/m^3	2.58	J	J	Yes
Styrene	5.5	ug/m^3	2.58	-	U	Yes
Bromoform	13	ug/m^3	2.58	-	U	Yes
Cumene	6.3	ug/m^3	2.58	-	U	Yes
1,1,2,2-Tetrachloroethane	8.8	ug/m^3	2.58	-	U	Yes
Propylbenzene	6.3	ug/m^3	2.58	-	U	Yes
4-Ethyltoluene	3.9	ug/m^3	2.58	-	J	Yes
1,3,5-Trimethylbenzene	2.5	ug/m^3	2.58	-	J	Yes
1,2,4-Trimethylbenzene	3.6	ug/m^3	2.58	-	J	Yes
1,3-Dichlorobenzene	17	ug/m^3	2.58	-	-	Yes
1,4-Dichlorobenzene	7.8	ug/m^3	2.58	-	U	Yes
alpha-Chlorotoluene	6.7	ug/m^3	2.58	-	U	Yes
1,2-Dichlorobenzene	7.8	ug/m^3	2.58	-	U	Yes
1,2,4-Trichlorobenzene	38	ug/m^3	2.58	-	U	Yes
Hexachlorobutadiene	55	ug/m^3	2.58	-	U	Yes
Naphthalene	14	ug/m^3	2.58	-	U	Yes

Sample ID: 1701477A-09A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.4	ug/m^3	2.38	J	J	Yes
Freon 114	8.3	ug/m^3	2.38	-	U	Yes
Chloromethane	24	ug/m^3	2.38	-	U	Yes
Vinyl Chloride	3.0	ug/m^3	2.38	-	U	Yes
1,3-Butadiene	2.6	ug/m^3	2.38	-	U	Yes
Bromomethane	46	ug/m^3	2.38	-	U	Yes
Chloroethane	12	ug/m^3	2.38	-	U	Yes
Freon 11	1.2	ug/m^3	2.38	J	J	Yes
Ethanol	120	ug/m^3	2.38	-	J	Yes
Freon 113	9.1	ug/m^3	2.38	-	U	Yes
1,1-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Acetone	330	ug/m^3	2.38	-	-	Yes
2-Propanol	160	ug/m^3	2.38	-	-	Yes
Carbon Disulfide	2.6	ug/m^3	2.38	J	J	Yes
3-Chloropropene	15	ug/m^3	2.38	-	U	Yes
Methylene Chloride	41	ug/m^3	2.38	-	U	Yes
Methyl tert-butyl ether	17	ug/m^3	2.38	-	U	Yes
trans-1,2-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Hexane	2.4	ug/m^3	2.38	J	J	Yes
1,1-Dichloroethane	4.8	ug/m^3	2.38	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	10	ug/m^3	2.38	J	J	Yes
cis-1,2-Dichloroethene	4.7	ug/m^3	2.38	-	U	Yes
Tetrahydrofuran	3.5	ug/m^3	2.38	-	U	Yes
Chloroform	5.8	ug/m^3	2.38	-	U	Yes
1,1,1-Trichloroethane	6.5	ug/m^3	2.38	-	U	Yes
Cyclohexane	1.3	ug/m^3	2.38	J	J	Yes
Carbon Tetrachloride	7.5	ug/m^3	2.38	-	U	Yes
2,2,4-Trimethylpentane	2.7	ug/m^3	2.38	J	J	Yes
Benzene	3.8	ug/m^3	2.38	J	U	Yes
1,2-Dichloroethane	4.8	ug/m^3	2.38	-	U	Yes
Heptane	2.6	ug/m^3	2.38	J	J	Yes
Trichloroethene	6.4	ug/m^3	2.38	-	U	Yes
1,2-Dichloropropane	5.5	ug/m^3	2.38	-	U	Yes
1,4-Dioxane	17	ug/m^3	2.38	-	U	Yes
Bromodichloromethane	8.0	ug/m^3	2.38	-	U	Yes
cis-1,3-Dichloropropene	5.4	ug/m^3	2.38	-	U	Yes
4-Methyl-2-pentanone	0.95	ug/m^3	2.38	J	J	Yes
Toluene	10	ug/m^3	2.38	-	-	Yes

trans-1,3-Dichloropropene	5.4	ug/m^3	2.38	-	U	Yes
1,1,2-Trichloroethane	6.5	ug/m^3	2.38	-	U	Yes
Tetrachloroethene	1.3	ug/m^3	2.38	J	J	Yes
2-Hexanone	19	ug/m^3	2.38	-	U	Yes
Dibromochloromethane	10	ug/m^3	2.38	-	U	Yes
1,2-Dibromoethane (EDB)	9.1	ug/m^3	2.38	-	U	Yes
Chlorobenzene	5.5	ug/m^3	2.38	-	U	Yes
Ethyl Benzene	1.1	ug/m^3	2.38	J	J	Yes
m,p-Xylene	2.4	ug/m^3	2.38	J	J	Yes
o-Xylene	1.6	ug/m^3	2.38	J	J	Yes
Styrene	0.60	ug/m^3	2.38	J	J	Yes
Bromoform	12	ug/m^3	2.38	-	U	Yes
Cumene	5.8	ug/m^3	2.38	-	U	Yes
1,1,2,2-Tetrachloroethane	8.2	ug/m^3	2.38	-	U	Yes
Propylbenzene	5.8	ug/m^3	2.38	-	U	Yes
4-Ethyltoluene	2.1	ug/m^3	2.38	J	J	Yes
1,3,5-Trimethylbenzene	0.53	ug/m^3	2.38	J	J	Yes
1,2,4-Trimethylbenzene	2.0	ug/m^3	2.38	J	J	Yes
1,3-Dichlorobenzene	13	ug/m^3	2.38	-	U	Yes
1,4-Dichlorobenzene	7.2	ug/m^3	2.38	-	U	Yes
alpha-Chlorotoluene	6.2	ug/m^3	2.38	-	U	Yes
1,2-Dichlorobenzene	7.2	ug/m^3	2.38	-	U	Yes
1,2,4-Trichlorobenzene	35	ug/m^3	2.38	-	U	Yes
Hexachlorobutadiene	51	ug/m^3	2.38	-	U	Yes
Naphthalene	12	ug/m^3	2.38	-	U	Yes

Sample ID: 1701477A-10A
Sample location: BMSMC, Humacao, PR
Sampling date: 29-Jan-17
Matrix: Air

METHOD: TO-15

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Freon 12	2.8	ug/m^3	2.47	J	J	Yes
Freon 114	8.6	ug/m^3	2.47	-	U	Yes
Chloromethane	26	ug/m^3	2.47	-	U	Yes
Vinyl Chloride	3.2	ug/m^3	2.47	-	U	Yes
1,3-Butadiene	2.7	ug/m^3	2.47	-	U	Yes
Bromomethane	48	ug/m^3	2.47	-	U	Yes
Chloroethane	13	ug/m^3	2.47	-	U	Yes
Freon 11	1.4	ug/m^3	2.47	J	J	Yes
Ethanol	280	ug/m^3	2.47	-	J	Yes
Freon 113	9.5	ug/m^3	2.47	-	U	Yes
1,1-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Acetone	230	ug/m^3	2.47	-	-	Yes
2-Propanol	140	ug/m^3	2.47	-	-	Yes
Carbon Disulfide	3.2	ug/m^3	2.47	J	J	Yes
3-Chloropropene	15	ug/m^3	2.47	-	U	Yes
Methylene Chloride	43	ug/m^3	2.47	-	U	Yes
Methyl tert-butyl ether	18	ug/m^3	2.47	-	U	Yes
trans-1,2-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Hexane	4.4	ug/m^3	2.47	-	U	Yes
1,1-Dichloroethane	5.0	ug/m^3	2.47	-	U	Yes
2-Butanone (Methyl Ethyl Ketone)	15	ug/m^3	2.47	-	-	Yes
cis-1,2-Dichloroethene	4.9	ug/m^3	2.47	-	U	Yes
Tetrahydrofuran	3.6	ug/m^3	2.47	-	U	Yes
Chloroform	6.0	ug/m^3	2.47	-	U	Yes
1,1,1-Trichloroethane	6.7	ug/m^3	2.47	-	U	Yes
Cyclohexane	0.76	ug/m^3	2.47	J	J	Yes
Carbon Tetrachloride	7.8	ug/m^3	2.47	-	U	Yes
2,2,4-Trimethylpentane	5.8	ug/m^3	2.47	-	U	Yes
Benzene	3.9	ug/m^3	2.47	J	U	Yes
1,2-Dichloroethane	5.0	ug/m^3	2.47	-	U	Yes
Heptane	5.1	ug/m^3	2.47	-	U	Yes
Trichloroethene	6.6	ug/m^3	2.47	-	U	Yes
1,2-Dichloropropane	5.7	ug/m^3	2.47	-	U	Yes
1,4-Dioxane	18	ug/m^3	2.47	-	U	Yes
Bromodichloromethane	8.3	ug/m^3	2.47	-	U	Yes
cis-1,3-Dichloropropene	5.6	ug/m^3	2.47	-	U	Yes
4-Methyl-2-pentanone	1.3	ug/m^3	2.47	J	J	Yes
Toluene	5.5	ug/m^3	2.47	-	-	Yes

trans-1,3-Dichloropropene	5.6	ug/m^3	2.47	-	U	Yes
1,1,2-Trichloroethane	6.7	ug/m^3	2.47	-	U	Yes
Tetrachloroethene	8.4	ug/m^3	2.47	-	U	Yes
2-Hexanone	3.2	ug/m^3	2.47	J	J	Yes
Dibromochloromethane	10	ug/m^3	2.47	-	U	Yes
1,2-Dibromoethane (EDB)	9.5	ug/m^3	2.47	-	U	Yes
Chlorobenzene	5.7	ug/m^3	2.47	-	U	Yes
Ethyl Benzene	0.59	ug/m^3	2.47	J	J	Yes
m,p-Xylene	1.6	ug/m^3	2.47	J	J	Yes
o-Xylene	5.4	ug/m^3	2.47	-	U	Yes
Styrene	5.3	ug/m^3	2.47	-	U	Yes
Bromoform	13	ug/m^3	2.47	-	U	Yes
Cumene	6.1	ug/m^3	2.47	-	U	Yes
1,1,2,2-Tetrachloroethane	8.5	ug/m^3	2.47	-	U	Yes
Propylbenzene	6.1	ug/m^3	2.47	-	U	Yes
4-Ethyltoluene	1.1	ug/m^3	2.47	J	J	Yes
1,3,5-Trimethylbenzene	6.1	ug/m^3	2.47	-	U	Yes
1,2,4-Trimethylbenzene	1.1	ug/m^3	2.47	J	J	Yes
1,3-Dichlorobenzene	6.2	ug/m^3	2.47	J	J	Yes
1,4-Dichlorobenzene	7.4	ug/m^3	2.47	-	U	Yes
alpha-Chlorotoluene	6.4	ug/m^3	2.47	-	U	Yes
1,2-Dichlorobenzene	7.4	ug/m^3	2.47	-	U	Yes
1,2,4-Trichlorobenzene	37	ug/m^3	2.47	-	U	Yes
Hexachlorobutadiene	53	ug/m^3	2.47	-	U	Yes
Naphthalene	13	ug/m^3	2.47	-	U	Yes

Project Number:__1701477A___
Date:_____01/26_&_29/17____

REVIEW OF VOLATILE ORGANIC PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: QC criteria from "Compendium Method TO-15. Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS), January, 1999"; USEPA Hazardous Waste Support Branch. Validating Air Samples. Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, (SOP # HW-31. Revision #6. June, 2014). The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Eurofins_____ data package received has been reviewed and the quality control and performance data summarized. The data review for VOCs included:

Lab. Project/SDG No.: __1701477A_____ Sample matrix: ___Air_____
No. of Samples: _____10_____

Trip blank No.: _____-_____
Field blank No.: _____-_____
Equipment blank No.:___-_____
Field duplicate No.:__1701477A-06A/1701477A-07A;_1701477A-09A/1701477A-10A_____
_____

___X___ Data Completeness
___X___ Sampling Integrity/Preservation
___X___ GC/MS Tuning
___X___ Internal Standard Performance
___X___ Blanks
___X___ Surrogate Recoveries
___X___ Laboratory Control Spikes
___X___ Field Duplicates
___X___ Calibrations
___X___ Compound Identifications
___X___ Compound Quantitation
___X___ Quantitation Limits

Overall Comments:_____VOCs_(full_suite)_by_method_TO-15_____
_____

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer:_____ Rafael Dafaut _____
Date:__ _____03/24/17_____

DATA COMPLETENESS

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

All criteria were met __X___
Criteria were not met
and/or see below _____

SAMPLE INTEGRITY AND PRESERVATION

Canister used for sampling of the ambient air must be demonstrated clean, and leak free prior to sample collection. Cleanliness is demonstrated by the analysis of an individual canister or analysis of a representative canister, if only batch cleaning was required. Leak proof testing is performed on individual canisters. Canisters are used in conjunction with gauges, valves and flow controllers. Therefore, canister should be demonstrated clean and leak free inclusive of these components as appropriate.

a. Leak proof test:

Was the pressure of each canister measured before shipping? **Yes** or No

Was the pressure of each canister measured before sampling? **Yes** or No

Did the canister hold vacuum/pressure within +/- 2 psi from the date shipped to the sampling date? **Yes** or No

Note:

1. The laboratory should be notified if the difference between the laboratory and field pressure is greater than 2 psi.

Actions:

Actions for use of canisters with failing leak test criteria are indicated in Table 1 below.

Table 1. Canister Leak test Actions for TO-15 Analysis*

Matrix	Difference in initial and 24 hour pressure (psi) Criteria	Action	
		Detected Associated Compounds	Non-Detected Associated Compounds
Air	≤ 5	No qualification	
Air	> 5	J	UJ or R

*Excessive time period (> 3months) elapsed between leak test and actual use should be considered in evaluation of canister integrity.

b. Cleanliness

Integrity of the canister used for sampling of air for analysis should be maintained at all times including time of shipment to the field, sampling, shipping back to the laboratory and time of analysis. Analytical results of canister cleaning verification must be taken into account in the validation of sample results.

Does the canister meet the cleanliness criteria? **Yes** or No

Is the canister verification included in the data package? **Yes** or No

Actions:

Canister contamination actions are stated in Table 2 below.

Note:

Table 2. Canister Contamination Actions for TO-15 Analyses

Contamination Type/level	Canister Cleaning Result	Sample Result	Action for Samples
Clean Canister analysis	Detects	Analytes found in clean canister analysis are non-detects	No qualification required
	<CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and < 2x the CRQL	Report concentration of sample with a U
		≥ 2x the CRQL	No qualification required
	> CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and ≤ clean canister value	Report clean canister value with a U
		≥ CRQL and > clean canister value	No qualification required
	= CRQL	≤ CRQL	Report CRQL value with a U
		> CRQL	No qualification required

c. Holding time and sample integrity

SUMMA canisters are to minimize sample charges or loss for majority of the analyte. Sample integrity is maintained by ensuring the system is closed tight and canister pressure from the time of sampling to the time of analysis is maintained within a difference allowable due to temperature change.

Was the canister pressure measured at the conclusion of the sampling period? **Yes** or No

Was the canister pressure measured upon arrival to the laboratory? **Yes** or No

Was the canister pressure difference between sampling and analysis less than 5 psi? **Yes** or No

Actions:

Qualify sample results using technical holding time information as stated in Table 3.

Pressure difference between sampling and analysis should be less than 5 psi. Qualify samples as per Table 3 requirements.

Table 3. Holding Time Actions for TO-15 Volatile Analyses

Matrix	Preserved (Pressure difference between sampling and analysis ≤ 5psi)	Criteria	Action	
			Detected Associated Compounds	Non-Detected Associated Compounds
Air	Yes	< 30 days	No qualification	
	Yes	>30 days	J	UJ
Air	No	< 30 days	J	UJ
	No	>30 days	J	R

Complete table for all samples and note the integrity and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE ANALYZED	Pressure difference < 5 psi	ACTION
All samples analyzed within the recommended method holding time. All summa canisters received in good conditions. Pressure difference < 5 psi between sampling and analysis.				

<u>The following pressure conversion is used, if necessary</u>

PRESSURE CONVERSION TABLE								
PSI	ATM	kgf/cm²	in.H_2O	mmHg	in.Hg	Kpa	Bar	mm H_2O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.895	0.6895	704.28104
14.696	1	1.0332	407.484	760	29.921	101.325	1.01325	10350.0936
14.2233	0.96784	1	394.38	735.559	28.959	98.096	0.98067	10000
0.036092	0.002454	0.00253	1	1.8651	0.07343	0.249	0.00249	25.4
0.019336	0.001315	0.001359	0.53616	1	0.03937	0.1333	0.001333	13.618464
0.491154	0.0033421	0.03453	13.6185	25.4	1	3.3864	0.033864	345.9099
0.145	0.00987	0.010197	4.0186	7.5006	0.2953	1	0.01	102.07244
14.5038	0.98692	1.01972	402.156	750.062	29.53	100	1	10214.7624

All criteria were met __X___
Criteria were not met see below _____

GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

Gas Chromatograph/Mass Spectrometer (GC/MS) Instrument Performance Check

Action:

NOTES: This requirement does not apply when samples are analyzed by the Selected Ion Monitoring (SIM) technique.
All mass spectrometer instrument conditions must be identical to those used during the sample analysis. Background subtraction actions resulting in spectral distortions for the sole purpose of meeting the method specifications are contrary to the Quality Assurance (QA) objectives, and are therefore unacceptable.

NOTES: No data should be qualified based on BFB or DFTTP failure. Instances of this should be noted in the narrative.
All ion abundance ratios must be normalized to m/z 95, the nominal base peak, even though the ion abundance of m/z 174 may be up to 120% that of m/z 95.

1. If samples are analyzed without a preceding valid instrument performance check, qualify all data in those samples as unusable (R).
2. If the laboratory has made minor transcription errors which do not significantly affect the data, the data reviewer should make the necessary corrections on a copy of the form.
3. If the laboratory has failed to provide the correct forms or has made significant transcription or calculation errors, the Region's designated representative should contact the laboratory and request corrected data. If the information is not available, the reviewer must use professional judgment to assess the data and notify the Project Officer (PO).
4. If ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. When applying professional judgment to this topic, the most important factors to consider are the empirical results that are relatively insensitive to location on the chromatographic profile and the type of instrumentation. Therefore, the critical ion abundance criteria for BFB are the m/z 95/96, 174/175, 174/176, and 176/177 ratios. The relative abundances of m/z 50 and 75 are of lower importance. This issue is more critical for Tentatively Identified Compounds (TICs) than for target analytes.
5. Note, in the Data Review Narrative, decisions to use analytical data associated with BFB instrument performance check failures (not meeting contract requirements).
6. If the reviewer has reason to believe that instrument performance check criteria were achieved using techniques other than those described in the Compendium method TO-15 entitled "Determination Of Volatile Organic Compounds(VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry(GC/MS)", section 10.4, obtain additional information on the instrument performance checks. If the techniques employed are found to be at variance with the contract requirements, the performance and procedures of the laboratory may merit evaluation.
7. Use professional judgment to determine whether associated data should be qualified based on the spectrum of the mass calibration compound.

__X___ The BFB performance results were reviewed and found to be within the specified criteria.

__X___ BFB tuning was performed for every 24 hours of sample analysis.

If no, use professional judgment to determine whether the associated data should be accepted, qualified or rejected.

List the samples affected: _____

If mass calibration is in error, all associated data are rejected.

All criteria were met __X___
Criteria were not met
and/or see below _____

CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____01/16/17_____
Date of initial calibration verification:_____-_____
Dates of continuing calibration:_____02/06/17_(8:20_AM)_____
Instrument ID numbers:_____MSD-A_____
Matrix/Level:_____Air/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
Initial and continuing calibrations meet method specific requirements except for the cases described in this document.				

Note:

The following criteria apply:

Table 5. Initial Calibration Actions for TO-15 Analyses

Criteria for TO-15 Analysis	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
RRF < 0.010 (poor response volatile target compounds, Table 4) RRF < 0.050 (all other volatile target compounds)	J (based on mass spectral identification)	R
RRF > 0.010 (poor response volatile target compounds, Table 4) RRF > 0.050 (all other volatile target compounds)	No qualification	
% RSD > 40.0 or < -40.0 (poor response volatile target compounds, Table 4) % RSD > 30.0 or < -30.0 (all other Volatile target compounds)	No qualification	
% RSD < 40.0 and > -40.0 (poor response volatile target compounds, Table 4) % RSD < 30.0 and > -30.0 (all other volatile target compounds)	J	Use professional judgment

Table 6. Continuing Calibration Verification (CCV) Actions for TO-15 Analyses

Criteria for CCV	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
RRF < 0.010 (poor response volatile target compounds, Table 4) RRF < 0.050 (all other volatile target compounds)	J (based on mass spectral identification)	R
RRF > 0.010 (poor response volatile target compounds, Table 4) RRF > 0.050 (all other volatile target compounds)	No qualification	
%D > 40.0 or < -40.0 (poor response volatile target compounds, Table 4) %D > 30.0 or < -30.0 (all other Volatile target compounds)	J	UJ
%D < 40.0 and > -40.0 (poor response volatile target compounds, Table 4) %D < 30.0 and > -30.0 (all other volatile target compounds)	No qualification	

If the % D for daily calibration exceeds -90, use professional judgment to see if non-detects nee
to be qualified as unusable "R"

A separate worksheet should be filled for each initial curve

Table 4. TO 15 Volatile Compounds List*

Compound	**CAS Number**	**Synonyms**
Acetone	67-64-1	Dimethyl ketone; Dimethylformaldehyde; 2-Propanone
Allyl chloride	107-05-1	3-Chloropropene; 3-Chloroprene
Benzene	71-43-2	Benzol; Benzine
Benzyl chloride	100-44-7	Chloromethylbenzene; alpha-Chlorotoluene
Bromodichloromethane	75-27-4	Monobromodichloromethane; Methane-bromodichloro
Bromoethene	593-60-2	Vinyl bromide; Monobromoethene
Bromoform	75-25-2	Tribromoethane
Bromomethane	74-83-9	Methyl bromide; Monobromomethane
1,3-Butadiene	106-99-0	Biethylene; Erythrene; Pyrrolyene
Carbon disulfide	***75-15-0***	***Carbon bisulfide; Carbon sulfide***
Carbon tetrachloride	56-23-5	Carbon tet; Tetrachloromethane
Chlorobenzene	108-90-7	Monochlorobenzene; Chlorobenzol; Benzene chloride
Chloroethane	***75-00-3***	***Ethyl chloride; Chlorene; Chloryl***
Chloroethene	75-01-4	Vinyl chloride; Ethylene monochloride
Chloroform	67-66-3	Trichloromethane; Methyltrichloride; Methane trichloride
Chloromethane	***74-87-3***	***R40; Methyl chloride; Monochloromethane***
Cyclohexane	110-82-7	Hexamethylene; Hexahydrobenzene; Hexanaphthene
Dibromochloromethane	124-48-1	Chlorodibromomethane
1,2-Dibromoethane	***106-93-4***	***EDB; Ethylene dibromide***
1,2-Dichlorobenzene	95-50-1	ODB; Chloroben
1,3-Dichlorobenzene	541-73-1	meta-Dichlorobenzene; m-Phenylenedichloride
1,4-Dichlorobenzene	106-46-7	para-Dichlorobenzene; Parazene; Santochlor
1,1-Dichloroethane	75-34-3	Ethylidene chloride; Ethylidene dichloride
1,2-Dichloroethane	107-06-2	Ethylene dichloride; Glycol dichloride; 1,2-DCA
1,1-Dichloroethene	75-35-4	1,1-DCE; Vinylidene chloride
cis-1,2-Dichloroethylene	156-59-2	cis-1,2-DCE; cis-Acetylene dichloride
trans-1,2-Dichloroethylene	156-60-5	trans-1,2-DCE; trans-Acetylene dichloride
1,2-Dichloropropane	***78-87-5***	***Propylene dichloride; Propylene chloride***
cis-1,3-Dichloropropene	10061-01-5	1-Propene,1,3-dichloro-,(z)-; cis-1,3-Dichloro-1-Propene
trans-1,3-Dichloropropene	10061-02-6	trans-1,3-Dichloro-1-Propene; trans-1,3-Dichloropropylene
1,4-Dioxane	***123-91-1***	***Diethylene dioxide; Diethylene ether***
Ethyl acetate	141-78-6	Acetic acid ethyl ester; Acetic ether
Ethylbenzene	100-41-4	Ethylbenzol; Phenylethane
4-Ethyltoluene	622-96-8	1-Ethyl-4-methyl benzene; p-Methylethylbenzene
Freon 11 (CCl3F)	75-69-4	Trichlorofluoromethane; Fluorotrichloromethane; Fluorocarbon 11

Freon 12 (CCl2F2)	75-71-8	Dichlorodifluoromethane; Fluorocarbon 12
Freon 113 (C2Cl3F3)	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane; Fluorocarbon 113; 1,1,2-Trichlorotrifluoroethane
Freon 114 (C2Cl2F4)	76-14-2	1,2-Dichlorotetrafluoroethane; Halocarbon 114; 1,2-Dichloro-1,1,2,2-tetrafluoroethane
Heptane	142-82-5	Dipropylmethane; Heptyl hydride
Hexachlorobutadiene	87-68-3	1,3-Hexachlorobutadiene; Perchlorobutadiene
Hexane	110-54-3	n-Hexane; Hexyl hydride
2-Hexanone	591-78-6	Methyl butyl ketone; Butyl methyl ketone; Hexan-2-one
Isopropyl alcohol	67-63-0	2-Propanol; Isopropanol
Methylene chloride	***75-09-2***	***Dichloromethane; Methylene dichloride***
Methyl ethyl ketone	***78-93-3***	***MEK; 2-Butanone; Ethyl methyl ketone***
Methyl isobutyl ketone	108-10-1	MIBK; 2-Pentanone; Hexone; Isopropylacetone
Methyl tert-butyl ether	1634-04-4	MTBE; 2-Methoxy-2-methylpropane; tert-Butyl methyl ether
Propylene	115-07-1	Propene; Methylethylene
Styrene	100-42-5	Vinylbenzene; Phenylethylene
1,1,2,2-Tetrachloroethane	79-34-5	Tetrachloroethane; Acetylene tetrachloride; Bonoform
Tetrachloroethene	127-18-4	PCE; PERC; Perchloroethylene; Ethylene tetrachloride; Carbon bichloride; Carbon dichloride
Tetrahydrofuran	109-99-9	Diethylene oxide; Butylene oxide
Toluene	108-88-3	Toluol; Methylbenzene
1,2,4-Trichlorobenzene	120-82-1	1,2,4-Trichlorobenzol
1,1,1-Trichloroethane	71-55-6	Methyl chloroform; Trichloroethane
1,1,2-Trichloroethane	79-00-5	beta-Trichloroethane; Ethane trichloride; Vinyl trichloride
Trichloroethene	79-01-6	TCE; Acetylene trichloride; Ethinyl trichloride
1,2,4-Trimethylbenzene	95-63-6	Pseudocumene; Pseudocumol
1,3,5-Trimethylbenzene	108-67-8	Mesitylene; Trimethylbenzol
2,2,4-Trimethylpentane	540-84-1	Iso-octane; Isobutyltrimethylmethane
Vinyl acetate	108-05-4	Acetic acid ethenyl ether; Ethenyl acetate
p-Xylene	106-42-3	p-Methyltoluene; 1,4-dimethylbenzene
m-Xylene	108-38-3	m-Methyltoluene; 1,3-dimethylbenzene
o-Xylene	95-47-6	o-Methyltoluene; 1,2-Dimethylbenzene

*Laboratories use different sets and subsets of analytes on as needed basis.

NOTES:

Compounds in bold italicized letters may have poor GCMS response. These poor response compounds are evaluated using more relaxed relative response factor criteria as stated below.

Note: 4-methyl-2-pentanone does not have poor GCMS response.

All criteria were met _____
Criteria were not met
and/or see below ____X___

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Blanks criteria and appropriate actions

Table 7. Blank Actions for TO-15 Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Storage, Field, Trip, Instrument***	Detects	Not detected	No qualification required
	< CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL* and < 2x the CRQL**	Report concentration of sample with a "U"
		≥ 2x the CRQL**	No qualification required
	> CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL* and ≤ blank concentration	Report blank value for sample concentration with a U
		≥ CRQL* and > blank concentration	No qualification required
	= CRQL*	≤ CRQL*	Report CRQL value with a U
		> CRQL*	No qualification required
	Gross contamination **	Detects	Report blank value for sample concentration with a U

* 2x the CRQL for methylene chloride, 2-butanone and acetone.

** 4x the CRQL for methylene chloride, 2-butanone, and acetone.

*** Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 µg/L.

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_All_method_blank_meet_method_specific_criteria_except_for_the_cases_described_in_this____ _document.____				
_02/06/17_____	_1701477A-11A_	_Air/low____	__Acetone_____	_1.7_ppbv_____
			_Benzene_____	_0.34_ppbv_____

Note: Concentration detected below the reporting limit, results qualified for benzene and acetone following the table above in all samples from the batch.

Field/Equipment/Trip blank

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_No_field/trip/equipment_blanks_analyzed_with_this_data_package._____				

Field/trip blank actions

Field or Trip blank when available should be assessed for possible contaminants in the canister used for trip blank. This canister and its analytical results are specific to the trip blank sample **only**. If contaminants are present in the canister used for trip blank, its suitability for use as trip blank can be assessed using the following criteria.

Table 8. Field/Trip Blank suitability based on Canister contamination

Clean canister Result	Field/Trip Blank Result	Action for Field/Trip Blank
Detects	Not detected	No qualification, no action for samples is required
Detects	< clean canister result or ≥ clean canister result but < 2X the clean canister result	Report as non-detect "U", invalid as trip blank, no action for samples is required.
	≥ 2x the clean canister result	No qualification, valid trip blank for sample actions.

CONTAMINATION SOURCE/LEVEL	COMPOUND	CONC/UNITS	AL/UNITS	SQL	AFFECTED SAMPLES

All criteria were met __X___
Criteria were not met
and/or see below _____

SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.
List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.
Matrix: solid/aqueous

SAMPLE ID	**SURROGATE COMPOUND**			**ACTION**
	1,2-DICHLOROETHANE-d4	**Toluene-d8**	**4-BFB**	

_Surrogate_recoveries_within_laboratory_control_limits_____
_____
_____
_____
_____
_____

QC Limits* (Air)

_____LL_to_UL___70__to_130__ _70__to_130_ _70__to_130__

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 80 – 120 % for aqueous and 70 – 130 % for solid samples.

Actions:

QUALITY	%R < 10%	%R = 10% - LL	%R > UL
Positive results	J	J	J
Nondetects results	R	UJ	Accept

Surrogate action should be applied:

If one or more surrogate in the VOC fraction is out of specification, but has a recovery of > 10%.

If any one surrogate in a fraction shows < 10 % recovery.

All criteria were met __X___
Criteria were not met
and/or see below _____

VIII. LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices. LCS concentration should be in the middle of the calibration range and under the same sample conditions.

1. LCS Recoveries Criteria

Table 9. LCS/LCSD Actions for TO-15 Analyses

Criteria	Action	
	Detected Associated Compounds	Non-detected Associated Compounds
Percent recovery Criteria		
%R > Upper Acceptance Limit (>130%)	J	No qualification
%R in the acceptable range, 70-130%	No qualification	
%R < Lower Acceptance Limit (< 70 %)	J	UJ
%R < 50%	J	R
Lower Acceptance Limit ≤ %R ≤ Upper Acceptance Limit	No qualification	
Relative Percent Difference Criteria		
% RPD ≤ 25%	No qualification	
% RPD > 25 %	J	UJ

LCS ID COMPOUND % R QC LIMIT

LCS/LCSD(Blank_spike)_analyzed_in_this_data_package._%_recoveries_and_RPD_____
_within_laboratory_control_limits._____
_____
_____
_____

Note:

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix? **Yes** or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected.

All criteria were met ____X____
Criteria were not met
and/or see below _____

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs:____LCS/LCSD_(lab)_____ Matrix:_____Air____
Sample IDs:____1701477A-06A/1701477A-07A____ Matrix:_____Air____
Sample IDs:____1701477A-09A/1701477A-10A____ Matrix:_____Air____

Field duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information. In the absence of QAPP guidance for validated data from field duplicates, the following action will be taken.

Identify which samples within the data package are field duplicates. Estimate the relative percent difference (RPD) between the vales for each compound. Note large RPDs (>50 %) in the narrative. Use professional judgment to qualify data when RPD > 50 %.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
1701477A-09A/1701477A-10A					
Ethanol	19	120	280	80 %	Qualify results (J) in affected samples.
Laboratory/field duplicate analyzed with this data package. RPD within laboratory and method performance criteria for target analytes except for the cases described in this document. Ethanol RPD outside the laboratory control limit and the method performance criteria. Results qualified as estimated (J) in affected samples.					

Other suggested actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

All criteria were met __X___
Criteria were not met
and/or see below _____

X. INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

List the internal standard area of samples which do not meet the criteria.

* Area of +40% or -40% of the IS area in the associated calibration standard (CCV standard or mid-point from initial calibration).
* Retention time (RT) within ± 20 seconds of the IS area in the associated calibration standard.

Table 10. Internal Standard Actions for TO-15 Analyses

Criteria	Action	
	Detected Associated Compounds*	Non-detected Associated Compounds*
Area counts > 140% of CCV or mid-point standard from initial calibration)	J-	No qualification
Area counts < 60% of CCV or mid-point standard from initial calibration)	J+	R
Area counts ≥ 60% but ≤ 140% of CCV or mid-point standard from initial calibration)	No qualification	
RT difference > 20.0 seconds between samples CCV or mid-point standard from initial calibration)	R*	
RT difference < 20.0 seconds between samples and CCV or mid-point standard from initial calibration)	No qualification	

* Examine the chromatographic profile for that sample to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Detects should not need to be qualified as unusable (R) if the mass spectral criteria are met.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE RANGE	ACTION

_Internal_standard_area_and_retention_times_within_laboratory_control_limits_for_both_samples_and_calibration_standards_____
_____
_____
_____
_____
_____
_____

All criteria were met __X___
Criteria were not met
and/or see below _____

XII. SAMPLE QUANTITATION

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

1701477A-1A

Ethanol RF = 0.49698

[ ] = (135329)(25.0)/(182077)(0.49698)

= 37.4 ppbv OK

All criteria were met __X___
Criteria were not met
and/or see below _____

XII. QUANTITATION LIMITS

A. Dilution performed
and

SAMPLE ID	DILUTION FACTOR	REASONS FOR DILUTION
Samples diluted by a factor of 2.82 or less except for the followings:		
B13SS-2-012917	5.16	Matrix interference
B13SS-2DUP-012917	4.91	Matrix interference

System Performance

Action:

Use professional judgment to qualify the data if it is determined that system performance has degraded during sample analyses. Note, for Laboratory Project Officer (PO) action, any degradation of system performance which significantly affected the data.

Note:

Overall Assessment of Data

Action:

1. Use professional judgment to determine if there is any need to qualify data which were not qualified based on the Quality Control (QC) criteria previously discussed.
2. Write a brief narrative to give the user an indication of the analytical limitations of the data. Note, for Laboratory Project Officer (PO) action, any inconsistency of the data with the Sample Delivery Group (SDG) Narrative. If sufficient information on the intended use and required quality of the data is available, the reviewer should include their assessment of the usability of the data within the given context. This may be used as part of a formal Data Quality Assessment (DQA).

Overall assessment of the data: Results are valid; the data can be used for decision making purposes.