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Analytical Laboratories, Since 1878



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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 280142  
ANALYTICAL REPORT

Sauna Works

Project : STANDARD

Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SAUNA COLD	280142-001
SAUNA 142*F	280142-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: \_\_\_\_\_

Date: 08/31/2016

Will Rice  
Project Manager  
will.rice@ctberk.com

### CASE NARRATIVE

Laboratory number: 280142  
Client: Sauna Works  
Request Date: 08/24/16  
Samples Received: 08/24/16

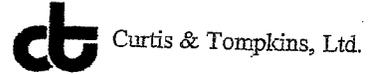
This data package contains sample and QC results for two air samples, requested for the above referenced project on 08/24/16. The samples were received cold and intact.

**Volatile Organics in Air by MS (EPA TO-15):**

Low response was observed for carbon tetrachloride in the ICV analyzed 08/24/16 02:30; affected data was qualified with "b". Low recovery was observed for 2-hexanone in the BSD for batch 238481; the associated RPD was within limits, and the low recovery was not associated with any reported results. No other analytical problems were encountered.



**COOLER RECEIPT CHECKLIST**



Login # 280142 Date Received 8/24/18 Number of coolers 0  
 Client Sawna works Project \_\_\_\_\_

Date Opened 8/24 By (print) SK (sign) [Signature]  
 Date Logged in 8/25 By (print) CAR (sign) [Signature]  
 Date Labelled ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) \_\_\_\_\_ YES   
 Shipping info \_\_\_\_\_

2A. Were custody seals present? ....  YES (circle) on cooler on samples  NO  
 How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_

2B. Were custody seals intact upon arrival? \_\_\_\_\_ YES NO

3. Were custody papers dry and intact when received?  YES NO

4. Were custody papers filled out properly (ink, signed, etc)?  YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form)  YES NO

6. Indicate the packing in cooler: (if other, describe) \_\_\_\_\_

- Bubble Wrap
- Foam blocks
- Bags
- None
- Cloth material
- Cardboard
- Styrofoam
- Paper towels

7. Temperature documentation: \* Notify PM if temperature exceeds 6°C

Type of ice used:  Wet  Blue/Gel  None Temp(°C) \_\_\_\_\_

Temperature blank(s) included?  Thermometer# \_\_\_\_\_  IR Gun# \_\_\_\_\_

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? \_\_\_\_\_ YES  NO  
 If YES, what time were they transferred to freezer? \_\_\_\_\_

9. Did all bottles arrive unbroken/unopened? \_\_\_\_\_ YES  NO

10. Are there any missing / extra samples? \_\_\_\_\_ YES  NO

11. Are samples in the appropriate containers for indicated tests? \_\_\_\_\_ YES  NO CAR 8/25

12. Are sample labels present, in good condition and complete? \_\_\_\_\_ YES  NO CAR 8/25

13. Do the sample labels agree with custody papers? \_\_\_\_\_ YES  NO

14. Was sufficient amount of sample sent for tests requested? \_\_\_\_\_ YES  NO

15. Are the samples appropriately preserved? \_\_\_\_\_ YES NO  N/A

16. Did you check preservatives for all bottles for each sample? \_\_\_\_\_ YES NO  N/A

17. Did you document your preservative check? (pH strip lot# \_\_\_\_\_) YES NO  N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? \_\_\_\_\_ YES NO  N/A

19. Did you change the hold time in LIMS for preserved terracores? \_\_\_\_\_ YES NO  N/A

20. Are bubbles > 6mm absent in VOA samples? \_\_\_\_\_ YES NO  N/A

21. Was the client contacted concerning this sample delivery? \_\_\_\_\_ YES  NO  
 If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

COMMENTS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Detections Summary for 280142

Results for any subcontracted analyses are not included in this summary.

Client : Sauna Works  
Project : STANDARD  
Location :

Laboratory Sample ID : 280142-001


### Volatile Organics in Air

Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Field ID:	SAUNA COLD	Units (M):	ug/m3
Lab ID:	280142-001	Diln Fac:	1.840
Matrix:	Air	Sampled:	08/24/16
Units (V):	ppbv	Received:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Freon 12	ND	0.92	ND	4.5	238518	08/29/16
Freon 114	ND	0.92	ND	6.4	238518	08/29/16
Chloromethane	ND	0.92	ND	1.9	238518	08/29/16
Vinyl Chloride	ND	0.92	ND	2.4	238518	08/29/16
1,3-Butadiene	ND	0.92	ND	2.0	238518	08/29/16
Bromomethane	ND	0.92	ND	3.6	238518	08/29/16
Chloroethane	ND	0.92	ND	2.4	238518	08/29/16
Trichlorofluoromethane	ND	0.92	ND	5.2	238518	08/29/16
Acrolein	ND	3.7	ND	8.4	238518	08/29/16
1,1-Dichloroethene	ND	0.92	ND	3.6	238518	08/29/16
Freon 113	ND	0.92	ND	7.1	238518	08/29/16
					238518	08/29/16
Carbon Disulfide	ND	0.92	ND	2.9	238518	08/29/16
Isopropanol	ND	3.7	ND	9.0	238518	08/29/16
Methylene Chloride	ND	0.92	ND	3.2	238518	08/29/16
trans-1,2-Dichloroethene	ND	0.92	ND	3.6	238518	08/29/16
MTBE	ND	0.92	ND	3.3	238518	08/29/16
n-Hexane	ND	0.92	ND	3.2	238518	08/29/16
1,1-Dichloroethane Vinyl	ND	0.92	ND	3.7	238518	08/29/16
Acetate	ND	0.92	ND	3.2	238518	08/29/16
cis-1,2-Dichloroethene	ND	0.92	ND	3.6	238518	08/29/16
2-Butanone	ND	0.92	ND	2.7	238518	08/29/16
					238518	08/29/16
Tetrahydrofuran	ND	0.92	ND	2.7	238518	08/29/16
Chloroform	ND	0.92	ND	4.5	238518	08/29/16
1,1,1-Trichloroethane	ND	0.92	ND	5.0	238518	08/29/16
Cyclohexane	ND	0.92	ND	3.2	238518	08/29/16
Carbon Tetrachloride	ND	0.92	ND	5.8	238481	08/26/16
Benzene	ND	0.92	ND	2.9	238518	08/29/16
1,2-Dichloroethane	ND	0.92	ND	3.7	238518	08/29/16
n-Heptane Trichloroethene	ND	0.92	ND	3.8	238518	08/29/16
1,2-Dichloropropane	ND	0.92	ND	4.9	238518	08/29/16
Bromodichloromethane	ND	0.92	ND	4.3	238518	08/29/16
cis-1,3-Dichloropropene	ND	0.92	ND	6.2	238518	08/29/16
4-Methyl-2-Pentanone	ND	0.92	ND	4.2	238518	08/29/16
	ND	0.92	ND	3.8	238518	08/29/16

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Field ID:	SAUNA COLD	Units (M):	ug/m3
Lab ID:	280142-001	Diln Fac:	1.840
Matrix:	Air	Sampled:	08/24/16
Units (V):	ppbv	Received:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Toluene	ND	0.92	ND	3.5	238518	08/29/16
trans-1,3-Dichloropropene	ND	0.92	ND	4.2	238518	08/29/16
1,1,2-Trichloroethane	ND	0.92	ND	5.0	238518	08/29/16
Tetrachloroethene	ND	0.92	ND	6.2	238518	08/29/16
2-Hexanone	ND	0.92	ND	3.8	238518	08/29/16
Dibromochloromethane	ND	0.92	ND	7.8	238518	08/29/16
1,2-Dibromoethane	ND	0.92	ND	7.1	238518	08/29/16
Chlorobenzene	ND	0.92	ND	4.2	238518	08/29/16
Ethylbenzene	ND	0.92	ND	4.0	238518	08/29/16
m,p-Xylenes	ND	0.92	ND	4.0	238518	08/29/16
o-Xylene	ND	0.92	ND	4.0	238518	08/29/16
Styrene	ND	0.92	ND	3.9	238518	08/29/16
Bromoform	ND	0.92	ND	9.5	238518	08/29/16
1,1,2,2-Tetrachloroethane	ND	0.92	ND	6.3	238518	08/29/16
4-Ethyltoluene	ND	0.92	ND	4.5	238518	08/29/16
1,3,5-Trimethylbenzene	ND	0.92	ND	4.5	238518	08/29/16
1,2,4-Trimethylbenzene	ND	0.92	ND	4.5	238518	08/29/16
1,3-Dichlorobenzene	ND	0.92	ND	5.5	238518	08/29/16
1,4-Dichlorobenzene	ND	0.92	ND	5.5	238518	08/29/16
Benzyl chloride	ND	0.92	ND	4.8	238518	08/29/16
1,2-Dichlorobenzene	ND	0.92	ND	5.5	238518	08/29/16
1,2,4-Trichlorobenzene	ND	0.92	ND	6.8	238518	08/29/16
Hexachlorobutadiene	ND	0.92	ND	9.8	238518	08/29/16
Naphthalene	ND	3.7	ND	19	238518	08/29/16

Surrogate	%REC	Limits	Batch#	Analyzed
Bromofluorobenzene	99	80-121	238518	08/29/16

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Field ID:	SAUNA 142*F	Units (M):	ug/m3
Lab ID:	280142-002	Diln Fac:	1.850
Matrix:	Air	Sampled:	08/24/16
Units (V):	ppbv	Received:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Freon 12	ND	0.93	ND	4.6	238518	08/29/16
Freon 114	ND	0.93	ND	6.5	238518	08/29/16
Chloromethane	ND	0.93	ND	1.9	238518	08/29/16
Vinyl Chloride	ND	0.93	ND	2.4	238518	08/29/16
1,3-Butadiene	ND	0.93	ND	2.0	238518	08/29/16
Bromomethane	ND	0.93	ND	3.6	238518	08/29/16
Chloroethane	ND	0.93	ND	2.4	238518	08/29/16
Trichlorofluoromethane	ND	0.93	ND	5.2	238518	08/29/16
Acrolein	ND	3.7	ND	8.5	238518	08/29/16
1,1-Dichloroethene	ND	0.93	ND	3.7	238518	08/29/16
Freon 113	ND	0.93	ND	7.1	238518	08/29/16
					238518	08/29/16
Carbon Disulfide	ND	0.93	ND	2.9	238518	08/29/16
Isopropanol	ND	3.7	ND	9.1	238518	08/29/16
Methylene Chloride	ND	0.93	ND	3.2	238518	08/29/16
trans-1,2-Dichloroethene	ND	0.93	ND	3.7	238518	08/29/16
MTBE	ND	0.93	ND	3.3	238518	08/29/16
n-Hexane	ND	0.93	ND	3.3	238518	08/29/16
1,1-Dichloroethane	ND	0.93	ND	3.7	238518	08/29/16
Vinyl Acetate	ND	0.93	ND	3.3	238518	08/29/16
cis-1,2-Dichloroethene	ND	0.93	ND	3.7	238518	08/29/16
2-Butanone	ND	0.93	ND	2.7	238518	08/29/16
Ethyl Acetate					238518	08/29/16
Tetrahydrofuran	ND	0.93	ND	2.7	238518	08/29/16
Chloroform	ND	0.93	ND	4.5	238518	08/29/16
1,1,1-Trichloroethane	ND	0.93	ND	5.0	238518	08/29/16
Cyclohexane	ND	0.93	ND	3.2	238518	08/29/16
Carbon Tetrachloride	ND	0.93	ND	5.8	238481	08/26/16
Benzene	ND	0.93	ND	3.0	238518	08/29/16
1,2-Dichloroethane	ND	0.93	ND	3.7	238518	08/29/16
n-Heptane	ND	0.93	ND	3.8	238518	08/29/16
Trichloroethene	ND	0.93	ND	5.0	238518	08/29/16
1,2-Dichloropropane	ND	0.93	ND	4.3	238518	08/29/16
Bromodichloromethane	ND	0.93	ND	6.2	238518	08/29/16
cis-1,3-Dichloropropene	ND	0.93	ND	4.2	238518	08/29/16
4-Methyl-2-Pentanone	ND	0.93	ND	3.8	238518	08/29/16

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Field ID:	SAUNA 142*F	Units (M):	ug/m3
Lab ID:	280142-002	Diln Fac:	1.850
Matrix:	Air	Sampled:	08/24/16
Units (V):	ppbv	Received:	08/24/16

Analyte	Result (V)	RL	Result (M)	RL	Batch#	Analyzed
Toluene	ND	0.93	ND	3.5	238518	08/29/16
trans-1,3-Dichloropropene	ND	0.93	ND	4.2	238518	08/29/16
1,1,2-Trichloroethane	ND	0.93	ND	5.0	238518	08/29/16
Tetrachloroethene	ND	0.93	ND	6.3	238518	08/29/16
2-Hexanone	ND	0.93	ND	3.8	238518	08/29/16
Dibromochloromethane	ND	0.93	ND	7.9	238518	08/29/16
1,2-Dibromoethane	ND	0.93	ND	7.1	238518	08/29/16
Chlorobenzene	ND	0.93	ND	4.3	238518	08/29/16
Ethylbenzene	ND	0.93	ND	4.0	238518	08/29/16
m,p-Xylenes	ND	0.93	ND	4.0	238518	08/29/16
o-Xylene	ND	0.93	ND	4.0	238518	08/29/16
Styrene	ND	0.93	ND	3.9	238518	08/29/16
Bromoform	ND	0.93	ND	9.6	238518	08/29/16
1,1,2,2-Tetrachloroethane	ND	0.93	ND	6.4	238518	08/29/16
4-Ethyltoluene	ND	0.93	ND	4.5	238518	08/29/16
1,3,5-Trimethylbenzene	ND	0.93	ND	4.5	238518	08/29/16
1,2,4-Trimethylbenzene	ND	0.93	ND	4.5	238518	08/29/16
1,3-Dichlorobenzene	ND	0.93	ND	5.6	238518	08/29/16
1,4-Dichlorobenzene	ND	0.93	ND	5.6	238518	08/29/16
Benzyl chloride	ND	0.93	ND	4.8	238518	08/29/16
1,2-Dichlorobenzene	ND	0.93	ND	5.6	238518	08/29/16
1,2,4-Trichlorobenzene	ND	0.93	ND	6.9	238518	08/29/16
Hexachlorobutadiene	ND	0.93	ND	9.9	238518	08/29/16
Naphthalene	ND	3.7	ND	19	238518	08/29/16

Surrogate	%REC	Limits	Batch#	Analyzed
Bromofluorobenzene	100	80-121	238518	08/29/16

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238481
Units (V):	ppbv	Analyzed:	08/26/16
Diln Fac:	1.000		

Type: BS Lab ID: QC849057

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	12.38	124	70-130
Freon 114	10.00	13.82 b	138 *	70-130
Chloromethane	10.00	9.588	96	70-130
Vinyl Chloride	10.00	10.03	100	70-130
1,3-Butadiene	10.00	12.55	126	70-130
Bromomethane	10.00	11.79	118	70-130
Chloroethane	10.00	11.27	113	70-130
Trichlorofluoromethane	10.00	15.07 b	151 *	70-130
Acrolein	10.00	7.141	71	70-130
1,1-Dichloroethene	10.00	11.49	115	70-130
Freon 113	10.00	14.00 b	140 *	70-130
Acetone	10.00	11.54	115	70-130
Carbon Disulfide	10.00	8.774	88	70-130
Isopropanol	10.00	9.319	93	70-130
Methylene Chloride	10.00	10.18	102	70-130
trans-1,2-Dichloroethene	10.00	10.98	110	70-130
MTBE	10.00	9.930	99	70-130
n-Hexane	10.00	11.76	118	70-130
1,1-Dichloroethane	10.00	11.43	114	70-130
Vinyl Acetate	10.00	10.48	105	70-130
cis-1,2-Dichloroethene	10.00	9.815	98	70-130
2-Butanone	10.00	12.74	127	70-130
Ethyl Acetate	10.00	15.80 b	158 *	70-130
Tetrahydrofuran	10.00	9.845	98	70-130
Chloroform	10.00	11.11	111	70-130
1,1,1-Trichloroethane	10.00	10.95	109	70-130
Cyclohexane	10.00	10.17	102	70-130
Carbon Tetrachloride	10.00	11.84	118	70-130
Benzene	10.00	8.466	85	70-130
1,2-Dichloroethane	10.00	8.458	85	70-130
n-Heptane	10.00	9.829	98	70-130
Trichloroethene	10.00	10.62	106	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238481
Units (V):	ppbv	Analyzed:	08/26/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	8.408	84	70-130
Bromodichloromethane	10.00	9.668	97	70-130
cis-1,3-Dichloropropene	10.00	7.976	80	70-130
4-Methyl-2-Pentanone	10.00	9.306	93	70-130
Toluene	10.00	9.444	94	70-130
trans-1,3-Dichloropropene	10.00	7.894	79	70-130
1,1,2-Trichloroethane	10.00	11.09	111	70-130
Tetrachloroethene	10.00	11.35	114	70-130
2-Hexanone	10.00	6.959	70	70-130
Dibromochloromethane	10.00	11.21	112	70-130
1,2-Dibromoethane	10.00	10.41	104	70-130
Chlorobenzene	10.00	9.824	98	70-130
Ethylbenzene	10.00	8.791	88	70-130
m,p-Xylenes	20.00	17.74	89	70-130
o-Xylene	10.00	9.059	91	70-130
Styrene	10.00	9.578	96	70-130
Bromoform	10.00	12.22	122	70-130
1,1,2,2-Tetrachloroethane	10.00	8.250	83	70-130
4-Ethyltoluene	10.00	8.215	82	70-130
1,3,5-Trimethylbenzene	10.00	9.074	91	70-130
1,2,4-Trimethylbenzene	10.00	7.974	80	70-130
1,3-Dichlorobenzene	10.00	9.732	97	70-130
1,4-Dichlorobenzene	10.00	9.737	97	70-130
Benzyl chloride	10.00	7.541	75	70-130
1,2-Dichlorobenzene	10.00	9.524	95	70-130
1,2,4-Trichlorobenzene	10.00	8.873	89	70-130
Hexachlorobutadiene	10.00	8.653	87	70-130
Naphthalene	10.00	8.201	82	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units



**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238481
Units (V):	ppbv	Analyzed:	08/26/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	8.512	85	70-130	1	25
Bromodichloromethane	10.00	9.963	100	70-130	3	25
cis-1,3-Dichloropropene	10.00	8.162	82	70-130	2	25
4-Methyl-2-Pentanone	10.00	9.357	94	70-130	1	25
Toluene	10.00	9.188	92	70-130	3	25
trans-1,3-Dichloropropene	10.00	7.958	80	70-130	1	25
1,1,2-Trichloroethane	10.00	10.66	107	70-130	4	25
Tetrachloroethene	10.00	11.15	112	70-130	2	25
2-Hexanone	10.00	6.918	69 *	70-130	1	25
Dibromochloromethane	10.00	10.92	109	70-130	3	25
1,2-Dibromoethane	10.00	10.06	101	70-130	3	25
Chlorobenzene	10.00	9.534	95	70-130	3	25
Ethylbenzene	10.00	8.773	88	70-130	0	25
m,p-Xylenes	20.00	17.66	88	70-130	0	25
o-Xylene	10.00	8.711	87	70-130	4	25
Styrene	10.00	9.648	96	70-130	1	25
Bromoform	10.00	12.02	120	70-130	2	25
1,1,2,2-Tetrachloroethane	10.00	8.127	81	70-130	2	25
4-Ethyltoluene	10.00	8.201	82	70-130	0	25
1,3,5-Trimethylbenzene	10.00	8.937	89	70-130	2	25
1,2,4-Trimethylbenzene	10.00	7.955	80	70-130	0	25
1,3-Dichlorobenzene	10.00	9.771	98	70-130	0	25
1,4-Dichlorobenzene	10.00	9.692	97	70-130	0	25
Benzyl chloride	10.00	7.513	75	70-130	0	25
1,2-Dichlorobenzene	10.00	9.362	94	70-130	2	25
1,2,4-Trichlorobenzene	10.00	8.402	84	70-130	5	25
Hexachlorobutadiene	10.00	8.603	86	70-130	1	25
Naphthalene	10.00	8.184	82	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	94	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC849059	Diln Fac:	1.000
Matrix:	Air	Batch#:	238481
Units (V):	ppbv	Analyzed:	08/26/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC849059	Diln Fac:	1.000
Matrix:	Air	Batch#:	238481
Units (V):	ppbv	Analyzed:	08/26/16

<b>Analyte</b>	<b>Result (V)</b>	<b>RL</b>	<b>Result (M)</b>	<b>RL</b>
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Bromofluorobenzene	91	70-130

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units



## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238518
Units (V):	ppbv	Analyzed:	08/28/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	5.000	4.958	99	70-130
cis-1,3-Dichloropropene	5.000	5.309	106	70-130
4-Methyl-2-Pentanone	5.000	5.902	118	70-130
Toluene	5.000	4.859	97	70-130
trans-1,3-Dichloropropene	5.000	5.274	105	70-130
1,1,2-Trichloroethane	5.000	5.067	101	70-130
Tetrachloroethene	5.000	4.863	97	70-130
2-Hexanone	5.000	5.364	107	70-130
Dibromochloromethane	5.000	4.542	91	70-130
1,2-Dibromoethane	5.000	4.776	96	70-130
Chlorobenzene	5.000	4.801	96	70-130
Ethylbenzene	5.000	5.167	103	70-130
m,p-Xylenes	10.00	10.92	109	70-130
o-Xylene	5.000	5.173	103	70-130
Styrene	5.000	4.849	97	70-130
Bromoform	5.000	4.176	84	70-130
1,1,2,2-Tetrachloroethane	5.000	4.422	88	70-130
4-Ethyltoluene	5.000	5.574	111	70-130
1,3,5-Trimethylbenzene	5.000	5.022	100	70-130
1,2,4-Trimethylbenzene	5.000	5.303	106	70-130
1,3-Dichlorobenzene	5.000	4.960	99	70-130
1,4-Dichlorobenzene	5.000	5.043	101	70-130
Benzyl chloride	5.000	4.464	89	70-130
1,2-Dichlorobenzene	5.000	4.827	97	70-130
1,2,4-Trichlorobenzene	5.000	4.542	91	70-130
Hexachlorobutadiene	5.000	5.423	108	70-130
Naphthalene	5.000	5.023	100	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238518
Units (V):	ppbv	Analyzed:	08/28/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC849215

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	5.000	4.660	93	70-130	0	25
Freon 114	5.000	4.605	92	70-130	1	25
Chloromethane	5.000	4.084	82	70-130	3	25
Vinyl Chloride	5.000	4.680	94	70-130	0	25
1,3-Butadiene	5.000	4.482	90	70-130	0	25
Bromomethane	5.000	4.499	90	70-130	0	25
Chloroethane	5.000	5.019	100	70-130	0	25
Trichlorofluoromethane	5.000	5.010	100	70-130	1	25
Acrolein	5.000	4.705	94	70-130	0	25
1,1-Dichloroethene	5.000	5.338	107	70-130	3	25
Freon 113	5.000	4.915	98	70-130	3	25
Acetone	5.000	3.663	73	70-130	2	25
Carbon Disulfide	5.000	4.860	97	70-130	3	25
Isopropanol	5.000	4.298	86	70-130	0	25
Methylene Chloride	5.000	4.464	89	70-130	1	25
trans-1,2-Dichloroethene	5.000	5.495	110	70-130	1	25
MTBE	5.000	4.955	99	70-130	2	25
n-Hexane	5.000	4.478	90	70-130	1	25
1,1-Dichloroethane	5.000	4.689	94	70-130	3	25
Vinyl Acetate	5.000	5.863	117	70-130	2	25
cis-1,2-Dichloroethene	5.000	5.469	109	70-130	1	25
2-Butanone	5.000	4.703	94	70-130	2	25
Ethyl Acetate	5.000	4.614	92	70-130	0	25
Tetrahydrofuran	5.000	5.543	111	70-130	1	25
Chloroform	5.000	4.755	95	70-130	2	25
1,1,1-Trichloroethane	5.000	4.680	94	70-130	6	25
Cyclohexane	5.000	5.027	101	70-130	4	25
Carbon Tetrachloride	5.000	4.648 b	93	70-130	5	25
Benzene	5.000	5.041	101	70-130	3	25
1,2-Dichloroethane	5.000	5.095	102	70-130	3	25
n-Heptane	5.000	4.735	95	70-130	3	25
Trichloroethene	5.000	4.896	98	70-130	3	25
1,2-Dichloropropane	5.000	5.206	104	70-130	3	25

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Matrix:	Air	Batch#:	238518
Units (V):	ppbv	Analyzed:	08/28/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	5.000	4.779	96	70-130	4	25
cis-1,3-Dichloropropene	5.000	5.228	105	70-130	2	25
4-Methyl-2-Pentanone	5.000	5.878	118	70-130	0	25
Toluene	5.000	5.116	102	70-130	5	25
trans-1,3-Dichloropropene	5.000	4.975	100	70-130	6	25
1,1,2-Trichloroethane	5.000	5.161	103	70-130	2	25
Tetrachloroethene	5.000	4.981	100	70-130	2	25
2-Hexanone	5.000	5.504	110	70-130	3	25
Dibromochloromethane	5.000	4.516	90	70-130	1	25
1,2-Dibromoethane	5.000	4.778	96	70-130	0	25
Chlorobenzene	5.000	4.767	95	70-130	1	25
Ethylbenzene	5.000	5.090	102	70-130	2	25
m,p-Xylenes	10.00	11.08	111	70-130	1	25
o-Xylene	5.000	5.208	104	70-130	1	25
Styrene	5.000	5.029	101	70-130	4	25
Bromoform	5.000	4.101	82	70-130	2	25
1,1,2,2-Tetrachloroethane	5.000	4.705	94	70-130	6	25
4-Ethyltoluene	5.000	5.333	107	70-130	4	25
1,3,5-Trimethylbenzene	5.000	4.678	94	70-130	7	25
1,2,4-Trimethylbenzene	5.000	4.897	98	70-130	8	25
1,3-Dichlorobenzene	5.000	5.083	102	70-130	2	25
1,4-Dichlorobenzene	5.000	4.865	97	70-130	4	25
Benzyl chloride	5.000	4.509	90	70-130	1	25
1,2-Dichlorobenzene	5.000	4.882	98	70-130	1	25
1,2,4-Trichlorobenzene	5.000	4.397	88	70-130	3	25
Hexachlorobutadiene	5.000	5.289	106	70-130	3	25
Naphthalene	5.000	5.027	101	70-130	0	25

Surrogate	%REC	Limits
Bromofluorobenzene	110	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

## Batch QC Report

Volatile Organics in Air			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC849216	Diln Fac:	1.000
Matrix:	Air	Batch#:	238518
Units (V):	ppbv	Analyzed:	08/28/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	280142	Prep:	METHOD
Client:	Sauna Works	Analysis:	EPA TO-15
Project#:	STANDARD		
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC849216	Diln Fac:	1.000
Matrix:	Air	Batch#:	238518
Units (V):	ppbv	Analyzed:	08/28/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	86	70-130

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units