

DEPARTMENT OF ECOLOGY
Manchester Environmental Laboratory
7411 Beach Drive East • Port Orchard, Washington 98366-8204

Case Narrative

May 24, 2016

To: Teel, Steve

Project: Olympia Dry Cleaners

Work Order: 1605056

Subject: Volatile Organics Analysis

From: Dolores Montgomery *DM*

Sample Receipt

Enclosed are the VOA results for the samples received by MEL on May 13, 2016. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

These samples were prepared, analyzed, and verified by MEL according to the submitted chain-of-custody and MEL's procedures. A Sample Correlation Table with batch summary is located in Appendix A. The samples were:

- extracted following a modification of method SW5035.
- analyzed following a modification of method SW8260C.

Analyst Comments

Only one analysis for each soil samples was possible because only one encore sample core was provided for each sample. Therefore, no re-analysis was able to be performed on samples with outlying QC and the samples have been qualified accordingly.

Sample Qualification

The samples were qualified according to MEL's procedures. The table in Appendix B summarizes the manual qualifiers added by MEL. All results reported below the method reporting limit (RL) were automatically qualified as estimates, but not included in Appendix B.

The qualifiers are defined in Appendix C.

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendices D and E.

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

Field ID: FB@2

Work Order: 1605056
Project Officer: Teel, Steve
Initial Vol: 3.85 g
Final Vol: 5 mL

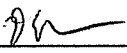
Lab ID #: 1605056-03
Collected: 5/12/2016
Prep Method: SW5035
Analysis Method: SW8260C
% Solids: 32.41%

Batch ID: B16E108
Prepared: 5/16/2016
Analyzed: 5/16/2016
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
75-34-3	1,1-Dichloroethane	4.01	UJ	4.01	1.71
75-35-4	1,1-Dichloroethene	4.01	UJ	4.01	1.84
156-59-2	Cis-1,2-Dichloroethene	10.1	J	4.01	1.76
127-18-4	Tetrachloroethene	4.01	UJ	4.01	1.51
156-60-5	Trans-1,2-Dichloroethene	4.01	UJ	4.01	1.62
79-01-6	Trichloroethene	4.01	UJ	4.01	1.68
75-01-4	Vinyl Chloride	4.08	J	4.01	1.54

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.1	10.0	101	80-120
17060-07-0	1,2-Dichloroethane-D4	13.5	10.0	135	80-120
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	p-Bromofluorobenzene	7.11	10.0	71	80-120
2037-26-5	Toluene-D8	12.3	10.0	123	80-120

Authorized by: 

Release Date: 05/24/16

Washington State Department of Ecology
Manchester Environmental Laboratory

Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

Field ID: FB@5.5

Work Order: 1605056
Project Officer: Teel, Steve
Initial Vol: 3.79 g
Final Vol: 5 mL

Lab ID #: 1605056-04
Collected: 5/12/2016
Prep Method: SW5035
Analysis Method: SW8260C
% Solids: 32.41%

Batch ID: B16E108
Prepared: 5/16/2016
Analyzed: 5/16/2016
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
75-34-3	1,1-Dichloroethane	4.07	U	4.07	1.73
75-35-4	1,1-Dichloroethene	4.07	U	4.07	1.87
156-59-2	Cis-1,2-Dichloroethene	12.0		4.07	1.79
127-18-4	Tetrachloroethene	4.07	U	4.07	1.54
156-60-5	Trans-1,2-Dichloroethene	4.07	U	4.07	1.64
79-01-6	Trichloroethene	4.07	U	4.07	1.71
75-01-4	Vinyl Chloride	4.07	U	4.07	1.56

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.0	10.0	100	80-120
17060-07-0	1,2-Dichloroethane-D4	12.1	10.0	121	80-120
540-36-3	1,4-Difluorobenzene	10.0	10.0	100	80-120
460-00-4	p-Bromofluorobenzene	8.85	10.0	89	80-120
2037-26-5	Toluene-D8	11.4	10.0	114	80-120

Authorized by: 

Release Date: 05/24/16

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Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

Field ID: FB@9

Work Order: 1605056
Project Officer: Teel, Steve
Initial Vol: 4.01 g
Final Vol: 5 mL

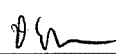
Lab ID #: 1605056-05
Collected: 5/12/2016
Prep Method: SW5035
Analysis Method: SW8260C
% Solids: 30.25%

Batch ID: B16E108
Prepared: 5/16/2016
Analyzed: 5/16/2016
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
75-34-3	1,1-Dichloroethane	4.12	UJ	4.12	1.76
75-35-4	1,1-Dichloroethene	4.12	UJ	4.12	1.89
156-59-2	Cis-1,2-Dichloroethene	124	J	4.12	1.81
127-18-4	Tetrachloroethene	4.96	J	4.12	1.56
156-60-5	Trans-1,2-Dichloroethene	4.12	UJ	4.12	1.67
79-01-6	Trichloroethene	6.63	J	4.12	1.73
75-01-4	Vinyl Chloride	24.2	J	4.12	1.58

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	12.2	10.0	122	80-120
17060-07-0	1,2-Dichloroethane-D4	15.8	10.0	158	80-120
540-36-3	1,4-Difluorobenzene	9.34	10.0	93	80-120
460-00-4	p-Bromofluorobenzene	6.54	10.0	65	80-120
2037-26-5	Toluene-D8	12.8	10.0	128	80-120

Authorized by: 

Release Date: 05/24/16

Washington State Department of Ecology
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Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Teel, Steve
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B16E108-BLK1
Prep Method: SW5035
Analysis Method: SW8260C
Source Field ID: B16E108-BLK1

Batch ID: B16E108
Prepared: 5/16/2016
Analyzed: 5/16/2016
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
75-34-3	1,1-Dichloroethane	1.00	U	1.00	0.43
75-35-4	1,1-Dichloroethene	1.00	U	1.00	0.46
156-59-2	Cis-1,2-Dichloroethene	1.00	U	1.00	0.44
127-18-4	Tetrachloroethene	1.00	U	1.00	0.38
156-60-5	Trans-1,2-Dichloroethene	1.00	U	1.00	0.40
79-01-6	Trichloroethene	1.00	U	1.00	0.42
75-01-4	Vinyl Chloride	1.00	U	1.00	0.38

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.1	10.0	111	80-120
17060-07-0	1,2-Dichloroethane-D4	12.5	10.0	125	80-120
540-36-3	1,4-Difluorobenzene	10.6	10.0	106	80-120
460-00-4	p-Bromofluorobenzene	8.67	10.0	87	80-120
2037-26-5	Toluene-D8	9.28	10.0	93	80-120

Authorized by: 

Release Date: 05/24/16

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Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

QC Type : LCS

Work Order: Batch QC
 Project Officer: Teel, Steve
 Initial Vol: 5 g
 Final Vol: 5 mL

Lab ID #: B16E108-BS1
 Prep Method: SW5035
 Analysis Method: SW8260C
 Source Field ID: B16E108-BS1

Batch ID: B16E108
 Prepared: 5/16/2016
 Analyzed: 5/16/2016
 Matrix: Sediment/Soil
 Units: %

Analyte	Result	Spike Level	RL	%Rec	%Rec Limits
1,1-Dichloroethane	11.6	10.0	1.00	116	75-125
1,1-Dichloroethene	11.4	10.0	1.00	114	75-125
Cis-1,2-Dichloroethene	11.7	10.0	1.00	117	75-125
Tetrachloroethene	11.7	10.0	1.00	117	75-125
Trans-1,2-Dichloroethene	12.2	10.0	1.00	122	75-125
Trichloroethene	11.4	10.0	1.00	114	75-125
Vinyl Chloride	11.5	10.0	1.00	115	60-140

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.3	10.0	103	80-120
17060-07-0	1,2-Dichloroethane-D4	11.5	10.0	115	80-120
540-36-3	1,4-Difluorobenzene	10.0	10.0	100	80-120
460-00-4	p-Bromofluorobenzene	10.4	10.0	104	80-120
2037-26-5	Toluene-D8	9.68	10.0	97	80-120

Authorized by: 

Release Date: 05/24/16

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Final Report for
Volatile Organics Analysis

Project: Olympia Dry Cleaners

QC Type : LCS Dup

Work Order: Batch QC
 Project Officer: Teel, Steve
 Initial Vol: 5 g
 Final Vol: 5 mL

Lab ID #: B16E108-BSD1
 Prep Method: SW5035
 Analysis Method: SW8260C
 Source Field ID: B16E108-BSD1

Batch ID: B16E108
 Prepared: 5/16/2016
 Analyzed: 5/16/2016
 Matrix: Sediment/Soil
 Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
1,1-Dichloroethane	10.9	10.0	109	6	75-125	30
1,1-Dichloroethene	10.8	10.0	108	5	75-125	30
Cis-1,2-Dichloroethene	10.9	10.0	109	7	75-125	30
Tetrachloroethene	11.0	10.0	110	6	75-125	30
Trans-1,2-Dichloroethene	11.2	10.0	112	8	75-125	30
Trichloroethene	10.8	10.0	108	5	75-125	30
Vinyl Chloride	10.7	10.0	107	7	60-140	40

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.1	10.0	101	80-120
17060-07-0	1,2-Dichloroethane-D4	10.5	10.0	105	80-120
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	p-Bromofluorobenzene	10.5	10.0	105	80-120
2037-26-5	Toluene-D8	10.0	10.0	100	80-120

Authorized by: 

Release Date: 05/24/16

Appendix A

Sample Correlation Table

Batch ID: B16E108
Prepared: 5/16/2016

Prep Method: SW5035
Analysis Method: SW8260C

<u>Field ID</u>	<u>MEL ID</u>
FB@2	1605056-03
FB@5.5	1605056-04
FB@9	1605056-05
Blank	B16E108-BLK1
LCS	B16E108-BS1
LCS Dup	B16E108-BSD1

Appendix B

Manual Qualification Table

WO: 1605056

Analysis: VOA

Reported result is estimated; ISTD recovery exceeded QC limits.

Tetrachloroethene J: 1605056-05,

Trichloroethene J: 1605056-05,

Reported result is estimated; Surrogate recovery exceeded QC limits.

Cis-1,2-Dichloroethene J: 1605056-03, 1605056-05,

Vinyl Chloride J: 1605056-03, 1605056-05,

Analyte was not detected at or above the estimated MRL; Surrogate recovery exceeded QC limits.

1,1-Dichloroethane UJ: 1605056-03, 1605056-05,

1,1-Dichloroethene UJ: 1605056-03, 1605056-05,

Tetrachloroethene UJ: 1605056-03,

Trans-1,2-Dichloroethene UJ: 1605056-03, 1605056-05,

Trichloroethene UJ: 1605056-03,

Appendix C

Data Qualifier Definitions

Code	Definition
E	Reported result is an estimate because it exceeds the calibration range.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
NAF	Not analyzed for.
NC	Not calculated.
REJ	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
U	The analyte was not detected at or above the reported sample quantitation limit.
UJ	The analyte was not detected at or above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte in the sample.
bold	The analyte was present in the sample. (Visual aid to locate detected compounds on the analytical report.)

Appendix D

QC Exceptions Report

Lab ID	Analyte	Exception
1605056-03	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
1605056-03	surr: p-Bromofluorobenzene	Exceeds lower control limit
1605056-03	surr: Toluene-D8	Exceeds upper control limit
1605056-03	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
1605056-04	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
1605056-05	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
1605056-05	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
1605056-05	surr: p-Bromofluorobenzene	Exceeds lower control limit
1605056-05	surr: Toluene-D8	Exceeds upper control limit
1605056-05	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
1605056-05	istd: Chlorobenzene-D5	Exceeds lower control limit
B16E108-BLK1	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit

Appendix E

Initial Calibration Exceptions Report

SEQ ID: B162105	Analysis: VOA
LabNumber	QC Exception

No ICAL exceptions.