eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Erin Waibel
Landau & Associates, Inc.
333 SW 5th Avenue
Portland, Oregon 97204

Generated 8/12/2024 8:54:05 PM

JOB DESCRIPTION

Boeing Portland 025116.624.640

JOB NUMBER

410-182876-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.

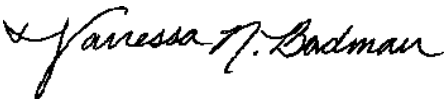
myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
Vanessa Badman, Project Manager
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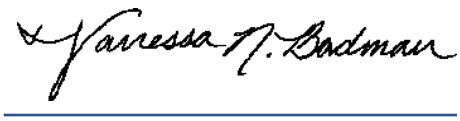
Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



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Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
410-182876-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 8/6/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Analyses were listed on COC, but individual samples were not designated for specific analyses. This does not meet regulatory requirements. The analyses were logged for VOCs per the containers received.

The Chain-of-Custody (COC) was incomplete as received. The COC is missing Sample Type (Grab or Composite). This does not meet regulatory requirements.

GC/MS VOA
Method 8260C_LL: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container(s): BOP-13ds-0824 (410-182876-1) and TripBlank01-080524 (410-182876-7). The sample container was received with headspace.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-13ds-0824 — Lab Sample ID: 410-182876-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.503	cn	0.500		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.99	cn	0.500		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-13dg-0824 — Lab Sample ID: 410-182876-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	53.4		5.00		ug/L	1		8260C LL	Total/NA
Trichloroethene	1.02		0.500		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-31ds-0824 — Lab Sample ID: 410-182876-3

No Detections.

Client Sample ID: BOP-31dg-0824 — Lab Sample ID: 410-182876-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	41.9		5.00		ug/L	1		8260C LL	Total/NA
Trichloroethene	2.62		0.500		ug/L	1		8260C LL	Total/NA

Client Sample ID: BOP-66ds-0824 — Lab Sample ID: 410-182876-5

No Detections.

Client Sample ID: BOP-Z-0824 — Lab Sample ID: 410-182876-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Acetone	54.8		5.00		ug/L	1		8260C LL	Total/NA
Trichloroethene	0.921		0.500		ug/L	1		8260C LL	Total/NA

Client Sample ID: TripBlank01-080524 — Lab Sample ID: 410-182876-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-13ds-0824
Date Collected: 08/05/24 10:35
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-1
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,1,2,2-Tetrachloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,1,2-Trichloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,1-Dichloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,1-Dichloroethene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,2-Dichloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
1,2-Dichloropropane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
2-Butanone	5.00	U cn	5.00		ug/L			08/11/24 14:55	1
2-Hexanone	5.00	U cn	5.00		ug/L			08/11/24 14:55	1
4-Methyl-2-pentanone	5.00	U cn	5.00		ug/L			08/11/24 14:55	1
Acetone	5.00	U cn	5.00		ug/L			08/11/24 14:55	1
Benzene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Bromodichloromethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Bromoform	1.00	U cn	1.00		ug/L			08/11/24 14:55	1
Bromomethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Carbon disulfide	1.00	U cn	1.00		ug/L			08/11/24 14:55	1
Carbon tetrachloride	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Chlorobenzene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Chloroethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Chloroform	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Chloromethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
cis-1,2-Dichloroethene	**0.503**	**cn**	0.500		ug/L			08/11/24 14:55	1
cis-1,3-Dichloropropene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Dibromochloromethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Ethylbenzene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Freon 113	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
m&p-Xylene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Methylene Chloride	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
o-Xylene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Styrene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Tetrachloroethene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Toluene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
trans-1,2-Dichloroethene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
trans-1,3-Dichloropropene	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Trichloroethene	**2.99**	**cn**	0.500		ug/L			08/11/24 14:55	1
Trichlorofluoromethane	0.500	U cn	0.500		ug/L			08/11/24 14:55	1
Vinyl acetate	1.00	U cn	1.00		ug/L			08/11/24 14:55	1
Vinyl chloride	0.500	U cn	0.500		ug/L			08/11/24 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*	*cn*	*80 - 120*		*08/11/24 14:55*	*1*
Dibromofluoromethane (Surr)	*106*	*cn*	*80 - 120*		*08/11/24 14:55*	*1*
4-Bromofluorobenzene (Surr)	*92*	*cn*	*80 - 120*		*08/11/24 14:55*	*1*
Toluene-d8 (Surr)	*96*	*cn*	*80 - 120*		*08/11/24 14:55*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-13dg-0824
Date Collected: 08/05/24 10:55
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-2
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 15:17	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 15:17	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 15:17	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 15:17	1
Acetone	**53.4**		5.00		ug/L			08/11/24 15:17	1
Benzene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 15:17	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 15:17	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 15:17	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 15:17	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:17	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 15:17	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 15:17	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Styrene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Toluene	0.500	U	0.500		ug/L			08/11/24 15:17	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:17	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 15:17	1
Trichloroethene	**1.02**		0.500		ug/L			08/11/24 15:17	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 15:17	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 15:17	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 15:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/11/24 15:17*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*08/11/24 15:17*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/11/24 15:17*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*08/11/24 15:17*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-31ds-0824
Date Collected: 08/05/24 12:00
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-3
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 15:39	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 15:39	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 15:39	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 15:39	1
Acetone	5.00	U	5.00		ug/L			08/11/24 15:39	1
Benzene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 15:39	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 15:39	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 15:39	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 15:39	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:39	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 15:39	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 15:39	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Styrene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Toluene	0.500	U	0.500		ug/L			08/11/24 15:39	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 15:39	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Trichloroethene	0.500	U	0.500		ug/L			08/11/24 15:39	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 15:39	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 15:39	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/11/24 15:39*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/11/24 15:39*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/11/24 15:39*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/11/24 15:39*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-31dg-0824
Date Collected: 08/05/24 12:10
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-4
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 16:01	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 16:01	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 16:01	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 16:01	1
Acetone	**41.9**		5.00		ug/L			08/11/24 16:01	1
Benzene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 16:01	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 16:01	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 16:01	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 16:01	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:01	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 16:01	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 16:01	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Styrene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Toluene	0.500	U	0.500		ug/L			08/11/24 16:01	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:01	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:01	1
Trichloroethene	**2.62**		0.500		ug/L			08/11/24 16:01	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 16:01	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 16:01	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/11/24 16:01*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*08/11/24 16:01*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/11/24 16:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/11/24 16:01*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-66ds-0824
Date Collected: 08/05/24 13:20
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-5
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 16:24	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 16:24	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 16:24	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 16:24	1
Acetone	5.00	U	5.00		ug/L			08/11/24 16:24	1
Benzene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 16:24	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 16:24	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 16:24	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 16:24	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:24	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 16:24	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 16:24	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Styrene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Toluene	0.500	U	0.500		ug/L			08/11/24 16:24	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:24	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Trichloroethene	0.500	U	0.500		ug/L			08/11/24 16:24	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 16:24	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 16:24	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/11/24 16:24*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*08/11/24 16:24*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/11/24 16:24*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/11/24 16:24*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-Z-0824
Date Collected: 08/05/24 08:00
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-6
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 16:46	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 16:46	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 16:46	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 16:46	1
Acetone	**54.8**		5.00		ug/L			08/11/24 16:46	1
Benzene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 16:46	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 16:46	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 16:46	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 16:46	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:46	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 16:46	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 16:46	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Styrene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Toluene	0.500	U	0.500		ug/L			08/11/24 16:46	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 16:46	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 16:46	1
Trichloroethene	**0.921**		0.500		ug/L			08/11/24 16:46	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 16:46	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 16:46	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/11/24 16:46*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/11/24 16:46*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/11/24 16:46*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/11/24 16:46*	*1*

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: TripBlank01-080524
Date Collected: 08/05/24 00:00
Date Received: 08/06/24 09:40

Lab Sample ID: 410-182876-7
Matrix: Water

Method: SW846 8260C LL - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,1,2,2-Tetrachloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,1,2-Trichloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,1-Dichloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,1-Dichloroethene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,2-Dichloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
1,2-Dichloropropane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
2-Butanone	5.00	U cn	5.00		ug/L			08/11/24 13:48	1
2-Hexanone	5.00	U cn	5.00		ug/L			08/11/24 13:48	1
4-Methyl-2-pentanone	5.00	U cn	5.00		ug/L			08/11/24 13:48	1
Acetone	5.00	U cn	5.00		ug/L			08/11/24 13:48	1
Benzene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Bromodichloromethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Bromoform	1.00	U cn	1.00		ug/L			08/11/24 13:48	1
Bromomethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Carbon disulfide	1.00	U cn	1.00		ug/L			08/11/24 13:48	1
Carbon tetrachloride	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Chlorobenzene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Chloroethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Chloroform	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Chloromethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
cis-1,2-Dichloroethene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
cis-1,3-Dichloropropene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Dibromochloromethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Ethylbenzene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Freon 113	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
m&p-Xylene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Methylene Chloride	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
o-Xylene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Styrene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Tetrachloroethene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Toluene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
trans-1,2-Dichloroethene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
trans-1,3-Dichloropropene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Trichloroethene	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Trichlorofluoromethane	0.500	U cn	0.500		ug/L			08/11/24 13:48	1
Vinyl acetate	1.00	U cn	1.00		ug/L			08/11/24 13:48	1
Vinyl chloride	0.500	U cn	0.500		ug/L			08/11/24 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*	*cn*	*80 - 120*		*08/11/24 13:48*	*1*
Dibromofluoromethane (Surr)	*103*	*cn*	*80 - 120*		*08/11/24 13:48*	*1*
4-Bromofluorobenzene (Surr)	*91*	*cn*	*80 - 120*		*08/11/24 13:48*	*1*
Toluene-d8 (Surr)	*96*	*cn*	*80 - 120*		*08/11/24 13:48*	*1*

Surrogate Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-182876-1	BOP-13ds-0824	108 cn	106 cn	92 cn	96 cn
410-182876-2	BOP-13dg-0824	107	104	90	95
410-182876-3	BOP-31ds-0824	108	105	92	97
410-182876-4	BOP-31dg-0824	108	104	92	96
410-182876-5	BOP-66ds-0824	108	104	90	96
410-182876-6	BOP-Z-0824	109	105	91	97
410-182876-7	TripBlank01-080524	105 cn	103 cn	91 cn	96 cn
LCS 410-538861/5	Lab Control Sample	108	101	97	100
LCS 410-538861/7	Lab Control Sample	104	102	91	96
LCSD 410-538861/6	Lab Control Sample Dup	102	100	97	98
LCSD 410-538861/8	Lab Control Sample Dup	105	103	93	97
MB 410-538861/10	Method Blank	107	103	92	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C LL - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-538861/10
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,1,2,2-Tetrachloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,1,2-Trichloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,1-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,2-Dichloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			08/11/24 13:26	1
2-Butanone	5.00	U	5.00		ug/L			08/11/24 13:26	1
2-Hexanone	5.00	U	5.00		ug/L			08/11/24 13:26	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			08/11/24 13:26	1
Acetone	5.00	U	5.00		ug/L			08/11/24 13:26	1
Benzene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Bromodichloromethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
Bromoform	1.00	U	1.00		ug/L			08/11/24 13:26	1
Bromomethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
Carbon disulfide	1.00	U	1.00		ug/L			08/11/24 13:26	1
Carbon tetrachloride	0.500	U	0.500		ug/L			08/11/24 13:26	1
Chlorobenzene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Chloroethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
Chloroform	0.500	U	0.500		ug/L			08/11/24 13:26	1
Chloromethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
cis-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 13:26	1
cis-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Dibromochloromethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
Ethylbenzene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Freon 113	0.500	U	0.500		ug/L			08/11/24 13:26	1
m&p-Xylene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Methylene Chloride	0.500	U	0.500		ug/L			08/11/24 13:26	1
o-Xylene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Styrene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Tetrachloroethene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Toluene	0.500	U	0.500		ug/L			08/11/24 13:26	1
trans-1,2-Dichloroethene	0.500	U	0.500		ug/L			08/11/24 13:26	1
trans-1,3-Dichloropropene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Trichloroethene	0.500	U	0.500		ug/L			08/11/24 13:26	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			08/11/24 13:26	1
Vinyl acetate	1.00	U	1.00		ug/L			08/11/24 13:26	1
Vinyl chloride	0.500	U	0.500		ug/L			08/11/24 13:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*08/11/24 13:26*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/11/24 13:26*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/11/24 13:26*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/11/24 13:26*	*1*

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-538861/5
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1-Trichloroethane			5.00	5.328		ug/L		107	78 - 126		
1,1,2,2-Tetrachloroethane			5.00	5.151		ug/L		103	75 - 123		
1,1,2-Trichloroethane			5.00	5.411		ug/L		108	80 - 120		
1,1-Dichloroethane			5.00	5.284		ug/L		106	74 - 120		
1,1-Dichloroethene			5.00	5.628		ug/L		113	80 - 131		
1,2-Dichloroethane			5.00	5.087		ug/L		102	69 - 122		
1,2-Dichloropropane			5.00	5.239		ug/L		105	80 - 120		
2-Butanone			62.5	70.31		ug/L		112	59 - 141		
2-Hexanone			62.5	74.42		ug/L		119	52 - 140		
4-Methyl-2-pentanone			62.5	73.84		ug/L		118	55 - 140		
Acetone			62.5	64.97		ug/L		104	60 - 146		
Benzene			5.00	5.508		ug/L		110	80 - 120		
Bromodichloromethane			5.00	5.496		ug/L		110	80 - 123		
Bromoform			5.00	5.071		ug/L		101	75 - 126		
Bromomethane			5.00	4.738		ug/L		95	63 - 120		
Carbon disulfide			5.00	5.475		ug/L		109	67 - 130		
Carbon tetrachloride			5.00	5.142		ug/L		103	64 - 141		
Chlorobenzene			5.00	5.277		ug/L		106	80 - 120		
Chloroethane			5.00	4.688		ug/L		94	63 - 120		
Chloroform			5.00	5.105		ug/L		102	80 - 120		
Chloromethane			5.00	4.776		ug/L		96	56 - 124		
cis-1,2-Dichloroethene			5.00	5.454		ug/L		109	80 - 122		
cis-1,3-Dichloropropene			5.00	4.846		ug/L		97	67 - 121		
Dibromochloromethane			5.00	5.249		ug/L		105	80 - 123		
Ethylbenzene			5.00	5.321		ug/L		106	80 - 120		
Freon 113			5.00	5.175		ug/L		103	67 - 124		
m&p-Xylene			10.0	10.69		ug/L		107	80 - 120		
Methylene Chloride			5.00	5.207		ug/L		104	80 - 120		
o-Xylene			5.00	5.187		ug/L		104	80 - 120		
Styrene			5.00	5.417		ug/L		108	80 - 120		
Tetrachloroethene			5.00	5.271		ug/L		105	80 - 120		
Toluene			5.00	5.336		ug/L		107	80 - 120		
trans-1,2-Dichloroethene			5.00	5.492		ug/L		110	80 - 122		
trans-1,3-Dichloropropene			5.00	4.907		ug/L		98	61 - 129		
Trichloroethene			5.00	5.285		ug/L		106	80 - 120		
Trichlorofluoromethane			5.00	4.799		ug/L		96	53 - 136		
Vinyl chloride			5.00	4.824		ug/L		96	60 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-538861/7
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl acetate			12.5	13.42		ug/L		107	64 - 145		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 410-538861/6
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			5.00	5.189		ug/L		104	78 - 126	3	30
1,1,2,2-Tetrachloroethane			5.00	5.202		ug/L		104	75 - 123	1	30
1,1,2-Trichloroethane			5.00	5.328		ug/L		107	80 - 120	2	30
1,1-Dichloroethane			5.00	5.092		ug/L		102	74 - 120	4	30
1,1-Dichloroethene			5.00	5.581		ug/L		112	80 - 131	1	30
1,2-Dichloroethane			5.00	5.192		ug/L		104	69 - 122	2	30
1,2-Dichloropropane			5.00	5.170		ug/L		103	80 - 120	1	30
2-Butanone			62.5	65.13		ug/L		104	59 - 141	8	30
2-Hexanone			62.5	66.09		ug/L		106	52 - 140	12	30
4-Methyl-2-pentanone			62.5	65.64		ug/L		105	55 - 140	12	30
Acetone			62.5	63.71		ug/L		102	60 - 146	2	30
Benzene			5.00	5.341		ug/L		107	80 - 120	3	30
Bromodichloromethane			5.00	5.331		ug/L		107	80 - 123	3	30
Bromoform			5.00	4.968		ug/L		99	75 - 126	2	30
Bromomethane			5.00	4.594		ug/L		92	63 - 120	3	30
Carbon disulfide			5.00	5.432		ug/L		109	67 - 130	1	30
Carbon tetrachloride			5.00	4.991		ug/L		100	64 - 141	3	30
Chlorobenzene			5.00	5.167		ug/L		103	80 - 120	2	30
Chloroethane			5.00	4.664		ug/L		93	63 - 120	1	30
Chloroform			5.00	4.958		ug/L		99	80 - 120	3	30
Chloromethane			5.00	4.791		ug/L		96	56 - 124	0	30
cis-1,2-Dichloroethene			5.00	5.399		ug/L		108	80 - 122	1	30
cis-1,3-Dichloropropene			5.00	4.796		ug/L		96	67 - 121	1	30
Dibromochloromethane			5.00	5.202		ug/L		104	80 - 123	1	30
Ethylbenzene			5.00	5.184		ug/L		104	80 - 120	3	30
Freon 113			5.00	5.071		ug/L		101	67 - 124	2	30
m&p-Xylene			10.0	10.33		ug/L		103	80 - 120	3	30
Methylene Chloride			5.00	5.193		ug/L		104	80 - 120	0	30
o-Xylene			5.00	5.037		ug/L		101	80 - 120	3	30
Styrene			5.00	5.269		ug/L		105	80 - 120	3	30
Tetrachloroethene			5.00	5.147		ug/L		103	80 - 120	2	30
Toluene			5.00	5.244		ug/L		105	80 - 120	2	30
trans-1,2-Dichloroethene			5.00	5.331		ug/L		107	80 - 122	3	30
trans-1,3-Dichloropropene			5.00	4.912		ug/L		98	61 - 129	0	30
Trichloroethene			5.00	5.183		ug/L		104	80 - 120	2	30

Method: 8260C LL - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-538861/6
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichlorofluoromethane			5.00	4.758		ug/L		95	53 - 136	1	30
Vinyl chloride			5.00	4.723		ug/L		94	60 - 125	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 410-538861/8
Matrix: Water
Analysis Batch: 538861

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl acetate			12.5	13.10		ug/L		105	64 - 145	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

QC Association Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

GC/MS VOA

Analysis Batch: 538861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-182876-1	BOP-13ds-0824	Total/NA	Water	8260C LL	
410-182876-2	BOP-13dg-0824	Total/NA	Water	8260C LL	
410-182876-3	BOP-31ds-0824	Total/NA	Water	8260C LL	
410-182876-4	BOP-31dg-0824	Total/NA	Water	8260C LL	
410-182876-5	BOP-66ds-0824	Total/NA	Water	8260C LL	
410-182876-6	BOP-Z-0824	Total/NA	Water	8260C LL	
410-182876-7	TripBlank01-080524	Total/NA	Water	8260C LL	
MB 410-538861/10	Method Blank	Total/NA	Water	8260C LL	
LCS 410-538861/5	Lab Control Sample	Total/NA	Water	8260C LL	
LCS 410-538861/7	Lab Control Sample	Total/NA	Water	8260C LL	
LCSD 410-538861/6	Lab Control Sample Dup	Total/NA	Water	8260C LL	
LCSD 410-538861/8	Lab Control Sample Dup	Total/NA	Water	8260C LL	

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Client Sample ID: BOP-13ds-0824
Lab Sample ID: 410-182876-1
Date Collected: 08/05/24 10:35
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 14:55

Client Sample ID: BOP-13dg-0824
Lab Sample ID: 410-182876-2
Date Collected: 08/05/24 10:55
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 15:17

Client Sample ID: BOP-31ds-0824
Lab Sample ID: 410-182876-3
Date Collected: 08/05/24 12:00
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 15:39

Client Sample ID: BOP-31dg-0824
Lab Sample ID: 410-182876-4
Date Collected: 08/05/24 12:10
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 16:01

Client Sample ID: BOP-66ds-0824
Lab Sample ID: 410-182876-5
Date Collected: 08/05/24 13:20
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 16:24

Client Sample ID: BOP-Z-0824
Lab Sample ID: 410-182876-6
Date Collected: 08/05/24 08:00
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 16:46

Client Sample ID: TripBlank01-080524
Lab Sample ID: 410-182876-7
Date Collected: 08/05/24 00:00
Matrix: Water
Date Received: 08/06/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C LL		1	538861	DVW2	ELLE	08/11/24 13:48

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 410-182876-1
Project/Site: Boeing Portland 025116.624.640

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	PA200001	09-11-24

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Method	Method Description	Protocol	Laboratory
8260C LL	Volatile Organic Compounds by GC/MS	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: Boeing Portland 025116.624.640

Job ID: 410-182876-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-182876-1	BOP-13ds-0824	Water	08/05/24 10:35	08/06/24 09:40
410-182876-2	BOP-13dg-0824	Water	08/05/24 10:55	08/06/24 09:40
410-182876-3	BOP-31ds-0824	Water	08/05/24 12:00	08/06/24 09:40
410-182876-4	BOP-31dg-0824	Water	08/05/24 12:10	08/06/24 09:40
410-182876-5	BOP-66ds-0824	Water	08/05/24 13:20	08/06/24 09:40
410-182876-6	BOP-Z-0824	Water	08/05/24 08:00	08/06/24 09:40
410-182876-7	TripBlank01-080524	Water	08/05/24 00:00	08/06/24 09:40

410-182876 Chain of Custody

of-Custody

Seattle/Edmonds (425) 778-0907 | Spokane (509) 327-9737
Tacoma (253) 926-2493 | ✓ Portland (503) 542-1080

Date 8/5/24
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name Doerig Tortuna
Project No. 025116.624.640
Project Location/Event Gresham, OR Annual GWM TSA 2024
Sampler's Name Ian McMillen
Project Contact Erin Winkel
Send Results To erinwinkel@landauinc.com; data@landauinc.com

Special Handling Requirements:
Shipment Method:
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers
BOP-13ds-0824	8/5/24	10:35	GW	3
BOP-13dg-0824		10:55		2
BOP-31ds-0824		12:00		3
BOP-31dg-0824		12:10		3
BOP-66ds-0824		13:20		3
BOP-z-0824		8:00		2
TripBlank01-080524	—	—	W	2

Testing Parameters

8260 VOCs Reduce 35 List *

Observations/Comments

Allow water samples to settle, collect aliquot from clear portion ☐
NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
Dissolved metal samples were field filtered

Other * HCl preserved

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature NVVVR
Printed Name Ian McMillen	Printed Name	Printed Name	Printed Name Nicole Rhett
Company Landau Associates	Company	Company	Company NWA
Date 8/5/24 Time 16:31	Date Time	Date Time	Date 8/6/24 Time 0940

NJ

C.I.S C.I.4

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018 MR

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 410-182876-1

Login Number: 182876

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Santiago, Nathaniel

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	True	