



Memorandum

To: Nick Garson, Boeing
From: Tom McKeon, P.E. CALIBRE
Date: July 22, 2021
Subject: **Boeing Renton - Summary of Recent Excavation Work and Sampling at Apron R Construction Site**

Executive Summary

The Boeing Company (Boeing) has been working with the Washington State Department of Ecology (Ecology) to address historic releases of hazardous substances at the Boeing Renton Facility (Facility) located in the City of Renton, Washington. Boeing entered into Agreed Order No. DE 97HZ-N233 (Agreed Order) with Ecology to address former releases at the Facility. The initial Agreed Order became effective on October 10, 1997. Following completion of the Cleanup Action Plan (CAP), Boeing entered into Agreed Order No. 8191 with Ecology to remediate former releases at the Facility in accordance with the CAP for the Facility which became effective on January 2, 2013.

Pursuant to the 2013 Order, Boeing is required to notify Ecology's Project Coordinator in writing of any newly-identified SWMU(s), newly-discovered release(s) from known SWMU(s), and newly-discovered AOCs at the Facility no later than 30) days after discovery.

During 2021, Boeing's construction contractor (Skanska) has been working on various construction projects at the north end of the Boeing Renton Facility, including the installation of a new stormwater system in Apron R. In mid-June 2021, Skanska observed a petroleum hydrocarbon-like sheen in shallow water contained within a small portion of an excavation trench. Work was stopped while Skanska coordinated next steps with Boeing Renton Environmental and Boeing Enterprise Remediation. During a July 9, 2021 teleconference, Boeing Enterprise Remediation informed the Washington State Department of Ecology (Ecology) Hazardous Waste & Toxics Reduction Program (HWTR) Project Manager of the preliminary findings. Throughout July 2021, Boeing's environmental teams have been coordinating with Skanska regarding the excavation soil and water sampling results and next steps so that they can complete their scheduled work by late July/early August 2021.

The objective of this Technical Memorandum is to notify Ecology of recent findings of a release/contamination encountered during excavation work in the Apron R construction at the Boeing Renton Facility. The enclosed information includes results from a soil stockpile and excavation water sampling to develop plans for treatment and disposal options, information about possible historical practices in this general area, and a discussion of next steps.

A brief summary of the chronology of events and the new information identified is provided below:

6/18/2021 Skanska (the Apron R construction contractor) discovered a sheen in water from an open excavation in front of Building 4-82 as part of Apron R construction and stopped work in the area. The excavation is a small area roughly 10 ft by 10 ft and extends into the shallow groundwater about 4 feet below ground surface. The location is shown in Figure 1.

6/21/2021	CALIBRE collected soil and water samples from the excavation, the on-site contractor (Skanska) described the oily seam as roughly 3 ft wide and 8-12 inches in depth.
6/25/2021	Received preliminary soil and water sampling results for VOCs and SVOCs.
7/1/2021	Briefed Skanska, Boeing Renton Environmental Group and Boeing Facilities concerning the VOC and SVOC results. Discussion of plausible sources and mitigation steps.
7/2/2021	Received complete laboratory data package
7/6/2021	Developed plans for handling/disposal of soil and water from excavation based on sampling data.
7/9/2021	Developed plans for mitigation and migration prevention of TPH and SVOCs by using a Granular Activated Carbon (GAC) layer; Received Skanska's geotechnical approval of layered construction backfill with GAC.
7/9/2021	Boeing Enterprise Remediation briefed Ecology via teleconference regarding the findings and sampling.
7/16/2021	CALIBRE visually confirmed that no sheen was observed in Lake Washington along the shoreline in vicinity and none observed at the nearest outfall to the Apron R construction activity.

Sampling Results

Environmental samples were collected by CALIBRE from the Apron R excavation on June 21st 2021. The sampling included two excavation water samples and one soil stockpile sample. The water samples were collected from two separate elevations in the pit (one at the water surface [labeled *OF-03-Surface*] and another in the water column [labeled *OF-03-Mid*]) approximately 1.5 feet below the water surface. A composite soil sample was collected from the approximately 15 cubic yard excavated soil stockpile (labeled *OF-03-Soil*). All samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, TPH as gasoline range, diesel range and motor oil range. The organics analysis were analyzed by Analytical Resources, Incorporated (ARI) and the metals analysis was completed by AmTest Inc. ARI subcontracted the metals analysis to AmTest based on the fast turnaround requested and extreme heat in the Seattle area had affected many parts of the lab equipment. Laboratory results are included in Attachment 1. The lab results include additional analyses such as pH, oil & grease, settleable solids, and other parameter collected to support the water treatment and disposal plans.

The water sampling results and comparison criteria considered for water waste management are shown in Table 1. The soil sampling results and comparison criteria considered for soil waste management are shown in Table 2.

Waste Management - Water

Water in the excavation will be handled and treated in multiple steps. The plan is based on the water sample results collected on June 21, 2021. These results showed that the water samples collected below the water surface contained only trace levels of the fuel related compounds detected, see sampling results in Table 1. These results showed water samples collected below the water surface were non-detect for VOCs and TPH-G, below MTCA potable criteria for TPH-D, slightly above MTCA potable criteria for TPH as motor oil, and under 1 µg/L for the two SVOCs detected, pyrene and chrysene.

The sample collected at the water surface included visible sheen/oil blobs, intentionally captured in the sample bottles, and had higher levels of TPH and SVOCs in addition to detecting other SVOCs and FOG. In late July, the surface of the water in the excavation will be skimmed to remove the previously observed sheen/minor oil

blobs. The skimmed water will go through an oil skimmer, ultrafiltration and then undergo the standard process for pre-treatment¹ at the Building 4-83 Waste Water Treatment Plant (WWTP) which discharges under permit to the King County sanitary sewer. A separate transfer log of the waste water will be prepared when the removal actions occur. Following treatment, the treated water from WWTP will be discharged to the sanitary sewer.

To complete the remaining construction tasks estimated for late July/early August 2021, the trench will be dewatered and water pumped from the excavation will be transferred to on-site Baker tanks in compliance with King County Discharge Authorization No 4486-02, which is a specific discharge permit into sanitary sewer for the Apron R project. The water will be pumped via a continuous process to Baker tanks for settling, sampled for pH and settleable solids using field tests and discharged to the sanitary sewer under the King County permit referenced above. Written documentation by the construction contractor (Skanska) for tracking the water pumped from the excavation will be prepared when the action is complete. Pads or/and booms will be used to prevent any additional hydrocarbons from entering the water, as well as additional skimming (if needed) as described above.

Waste Management – Soil Stockpile

Sampling results showed that the soil from the excavation is not classified as a listed or hazardous waste; for the organic compounds (VOCs and SVOCs) all analytes except benzo(a)pyrene are below the MTCA Method B criteria in CLARC for unrestricted/residential land use, and the benzo(a)pyrene detected is below the MTCA Method C criteria for industrial land use. Following the existing soil waste management plan developed for the Apron R construction project, the soil will be transported off site to a transfer station for off-site disposal at a licensed facility which accepts petroleum impacted soil. A separate tracking ticket will be prepared by Skanska and the transfer station when these actions happens.

Potential Source of Observed Release

The hydrocarbon observed in the Apron R excavation trench appears to be a weathered fuel from a discrete seam located on the north side of the excavation. The sample collected from the water surface intentionally included some of the oil blobs observed and no VOCs were detected in this water with visible oil/sheen present. Based on visual observations and sampling results, it is most likely a heavy fuel such as Bunker C. At the present time we do not know the source of the historic release. Relevant maps and historical aerial photos are included in Attachment 2. The historical information we have reviewed includes the following:

The Apron R excavation area is near the former fueling dock used to supply tanks for Shuffleton Power plant. The Shuffleton Power plant was built in 1929 and is visible in a 1936 aerial photo (including the fueling dock, pump house, 2 large tanks, and power plant). The fueling dock extended about 350+ feet into Lake Washington.

¹ The 4-83 WWTP process, operated under King County permit 7630-06, includes coagulation/ precipitation and settling, sand filtration, air stripping, return to storage tanks and sampling verification prior to discharge to the King County sanitary sewer.

A 1960 aerial photo includes the fueling dock, pump house, above ground piping, and 2 storage tanks in containment berms. The Shuffleton Power plant is outside of the photo but other records indicate it remained in standby/operations mode until 1989, and it is visible in a 1990 aerial photo.

Historical Boeing design/as-built drawings for the 4-81 and 4-82 buildings (1967) include pre-existing conditions before construction and include 2 large storage tanks, pump house, pipelines to the fueling dock, the fueling dock, and pipelines to Shuffleton Plant. All these structures, except the power plant, were removed prior to the Boeing 4-81 and 4-82 construction in the mid -1960s. The 1967 Boeing drawing indicates the prior fueling dock was removed and a new cooling water discharge canal (associated with the Shuffleton plant) was to be constructed on land and in-water on DNR property in Lake Washington. Ecology records from the TCP program (included in Attachment 2) describe this area as the Puget Sound Energy (PSE) Shuffleton, Dept. of Natural Resources (DNR) Lease Area, Parcel: 723059105, Facility Site ID: 82611157, Cleanup Site ID: 14484. Ecology records indicate that in 1966-1967, while they held the DNR lease, PSE created the upland portion of the lease area with dredged material from Lake Washington. An NFA letter for the upland portion of the DNR lease area was issued on June 26, 2000. The same TCP records also note cleanup actions for Bunker C contamination on some part of the larger PSE/ Shuffleton Parcels.

A 2014 aerial photo shows construction in the DNR parcel north of the Apron R excavation (construction by other parties) to remove the Shuffleton cooling water discharge canal on the DNR lease land and in-water work. A 2015 aerial photo shows the completed construction work where the trenching for stormwater discharge lines is visible on the PSE DNR Lease Parcel (highlighted with a yellow line added to the aerial photo). The construction shown in these two photos shows excavations across the area where the prior Shuffleton fuel line ran.

Next Steps

Skanska will complete Apron R stormwater system construction work in the current excavation area and expand the excavation approximately 20+ft to North to repair/replace a 10" fire water line that runs NW-SE at the edge of paved area. We presently anticipate that this work will be completed in late July with estimated completion of all other Apron R related construction work by 4Q 2021.

Skanska is on a tight schedule and the Boeing Enterprise Remediation Group has limited options at the current time for addressing the hydrocarbons observed in the Apron R excavation trench. However, as discussed with Ecology during the July 9 teleconference, planned mitigation measures include coordinating with Skanska to backfill the trench in late July with a GAC/backfill mixture in the open excavation. Figure 3 presents the conceptual details for this mitigation plan. This should substantially adsorb any dissolved hydrocarbons (dissolved TPH and PAH compounds) present in the immediate area.

We anticipate that future sampling may be needed to bound the impacted Apron R groundwater. As a first step, in late July 2021 we propose first to observe the conditions in the expanded excavation to the north in order to develop a plan. We will scope out possible Geoprobe sampling locations during this phase of the work and will prepare a future work plan after consultation with Ecology, including a schedule when the Apron R area can be accessed for groundwater investigation and plume delineation work.

Tables

Table 1 Water Sample Results

				Comparison Criteria				
Lab Results OF-3-surface sample				EPA Human Health for the consumption of Water + Organism (µg/L)	WAC 173-201A-240 Water & Organisms	CULs from Renton CAP	CLARC TEF adjusted based on Benzoapyrene equivalent	
Analysis	Units	Result	Flag					
SVOCs - EPA 8270E				units				
Phenanthrene	ug/L	17.4	J,D	No Value	No Value	No Value	NA	
Pyrene	ug/L	29.4	J,D	20	310	No Value	480	ug/L
Chrysene	ug/L	19.3	J,D	0.12	1.4	No Value	2.3	ug/L
NWTPH-Dx								
Diesel Range Organics (C12-C24)	mg/L	7.40	D	No Value	No Value	0.5	NA	mg/L
Motor Oil Range Organics (C24-C38)	mg/L	13.2	D	No Value	No Value	0.5	NA	mg/L
VOCs - EPA 8260D								
Acetone	ug/L	6.42	Q	No Value	No Value	No Value	NA	
Toluene	ug/L	0.12	J	57	180	No Value	NA	
NWTPHg								
Gasoline Range Organics	ug/L	<100	U	No Value				

based on MTCA B for BaP at 0.023 ug/L
BaP is benzoapyrene and TEF of 0.01

MTCA A/B 500 ug/L
converted to mg/L

non detect

J = Estimated concentration value detected below the reporting limit.

U = This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

H = Hold time violation - Hold time was exceeded.

NA = not applicable

No value= the regulations noted do not provide a comparable criteria

OF-3-surface Sample, other analytes

EPA 1664B			
HEM Oil & Grease	mg/L	110	
SGT-HEM NP Oil & Grease	mg/L	55	
HEM Polar Oil & Grease	mg/L	55	
SM 2540 F-97			
Settleable Solids	mL/L	2.7	
SM 4500-H+ B-00			
pH	pH units	7.14	H

Table 1 continued

				Comparison Criteria				
Lab Results OF-3-mid Sample				EPA Human Health for the consumption of Water + Organism (µg/L)	WAC 173-201A-240 Water & Organisms	CULs from Renton CAP	CLARC TEF adjusted based on Benzoapyrene equivalent	
Analysis	Units	Result	Flag					
SVOCs - EPA 8270E								units
Pyrene	ug/L	0.7	J	20	310	No Value	480	ug/L
Chrysene	ug/L	0.6	J	0.12	1.4	No Value	2.3	ug/L
NWTPH-Dx								
Diesel Range Organics (C12-C24)	mg/L	0.382		No Value	No Value	0.5	NA	mg/L
Motor Oil Range Organics (C24-C38)	mg/L	0.52		No Value	No Value	0.5	NA	mg/L
VOCs - EPA 8260D								
NO DETECTIONS				NA				
NWTPHg								
Gasoline Range Organics	ug/L	<100	U	NA				

based on MTCA B for BaP at 0.023 ug/L
and TEF of 0.01

MTCA A/B 500 ug/L
converted to mg/L

non detect all VOCs

non detect

J = Estimated concentration value detected below the reporting limit.

U = This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

H = Hold time violation - Hold time was exceeded.

NA = not applicable

No value= the regulations noted do not provide a comparable criteria

OF-3-mid Sample, other analytes

EPA 1664B			
HEM Oil & Grease	mg/L	<5	U
SGT-HEM NP Oil & Grease	mg/L	<5	U
HEM Polar Oil & Grease	mg/L	<5	U
SM 2540 F-97			
Settleable Solids	mL/L	<0.1	U
SM 4500-H+ B-00			
pH	pH units	6.96	H

Table 2 Soil Sampling Results**OF-03-Soil**

Analysis	Result	Flag
VOCs - EPA 8260D	ug/kg	
Acetone	96.9	
Carbon Disulfide	1.68	
2-Butanone	6.43	J
Benzene	0.59	J
Toluene	0.61	J
1,2,4-Trimethylbenzene	0.47	J
4-Isopropyl Toluene	0.71	J
2-Pentanone	3.10	J
SVOCs - EPA 8270E	ug/kg	
2-Methylnaphthalene	8,210	D
Acenaphthene	1,010	J,D
Fluorene	1,400	D,J
Phenanthrene	4,260	D
Anthracene	1,550	J,D
Pyrene	5,640	Q,D
Benzo(a)anthracene	1,790	J,D
Chrysene	3,280	D
Benzo(a)pyrene	935	J,D
1-Methylnaphthalene	6,260	D

J = Estimated concentration value detected below the reporting limit.

D = The reported value is from a dilution

Q = Indicates a detected analyte with an initial or continuing calibration that
that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)

MTCA Method B criteria
(as listed in lower half of this table)

Lab as		
mg/kg		
0.0969	29	mg/kg
0.00168	5	mg/kg
0.00643	48,000	mg/kg
0.00059	0.027	mg/kg
0.00061	4.5	mg/kg
0.00047	800	mg/kg
0.00071	no value	
0.0031	no value	

Lab as		
mg/kg		
		MTCA Method B criteria
8.21	320	mg/kg
1.01	98	mg/kg
1.4	100	mg/kg
4.26	No value	
1.55	2,300	mg/kg
5.64	650	mg/kg
1.79	2	mg/kg
3.28	19	mg/kg
0.935	0.190	mg/kg
6.26	34	mg/kg

Table 2 continued, basis of CLARC values for SVOCs

CAS No.	Chemical Name	Soil Method A Unrestricted Land Use (Table 740-1) (mg/kg)	Soil Method B Noncancer (Eq. 740-1) (mg/kg)	Soil Method B Cancer (Eq. 740-2) (mg/kg)	Soil Protective of Groundwater Vadose @ 13 degrees C (Eq. 747-1) (mg/kg)	Soil Protective of Groundwater Saturated (Eq. 747-1) (mg/kg)	Minimum of MTCA soil values (as listed for soil to left of this column) mg/kg	TEF: if applicable	Notes
83-32-9	acenaphthene		4,800		98	5	98		
120-12-7	anthracene		24,000		2,300	110	2,300		
56-55-3	benzo[a]anthracene						1.9	0.1	based on BaP, TEF adjusted
50-32-8	benzo[a]pyrene	1.00E-01	24	1.90E-01	4	1.90E-01	0.19	1.0	
218-01-9	chrysene						19	0.01	based on BaP, TEF adjusted
53-70-3	dibenz[a,h]anthracene						1.9	0.1	based on BaP, TEF adjusted
86-73-7	fluorene		3,200		100	5	100		
90-12-0	methyl naphthalene;1-		5,600	3.40E+01			34		
91-57-6	methyl naphthalene;2-		320				320		
129-00-0	pyrene		2,400		650	33.0	650		

For benzo[a]anthracene, benzo[a]pyrene, chrysene, dibenz[a,h]anthracene CLARC includes added notes to deal with PAH compounds
TEF is toxicity equivalency factors from MTCA for cPAHs relative to benzo(a)pyrene

Table 2 continued, basis of CLARC values for VOCs

CAS No.	Chemical Name	Soil Method A Unrestricted Land Use (Table 740-1) (mg/kg)	Soil Method B Noncancer (Eq. 740-1) (mg/kg)	Soil Method B Cancer (Eq. 740-2) (mg/kg)	Soil Protective of Groundwater Vadose @ 13 degrees C (Eq. 747-1) (mg/kg)	Soil Protective of Groundwater Saturated (Eq. 747-1) (mg/kg)	Minimum of MTCA soil values (as listed for soil to the left of this column) mg/kg
67-64-1	acetone		7.20E+04		2.90E+01	2.10E+00	29
71-43-2	benzene	3.00E-02	3.20E+02	1.80E+01	2.70E-02	1.70E-03	0.027
75-15-0	carbon disulfide		8.00E+03		5.00E+00	2.70E-01	5
108-88-3	toluene	7.00E+00	6.40E+03		4.50E+00	2.70E-01	4.5
526-73-8	trimethylbenzene;1,2,3-		8.00E+02				800
78-93-3	2-butanone (methyl ethyl ketone)		4.80E+04				48,000
99-87-6	4-Isopropyl Toluene	No value	No value	No value	No value	No value	
107-87-9	2-Pentanone	No value	No value	No value	No value	No value	

Figures

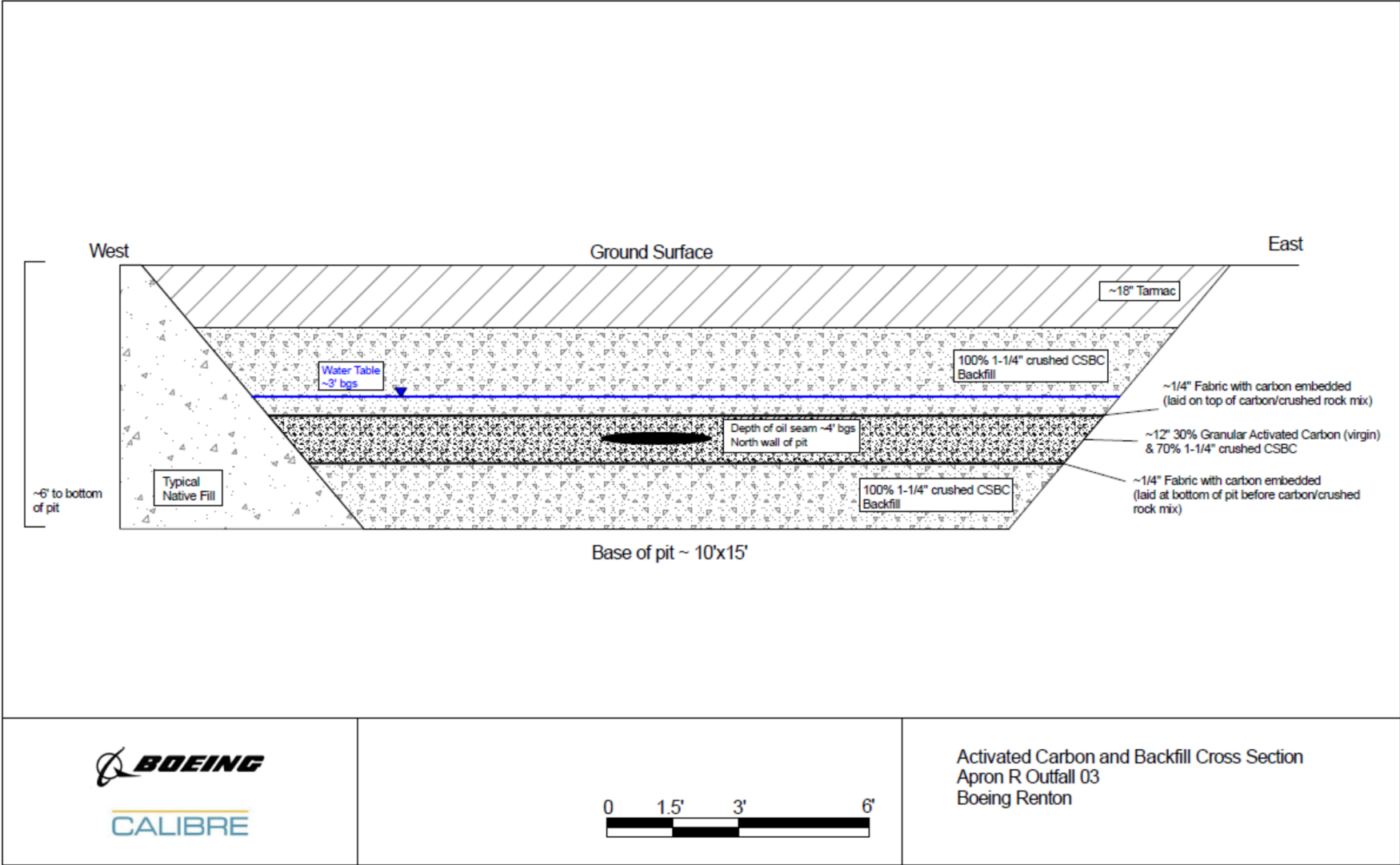
Figure 1 Site Location with the Renton Facility (near the North east corner of the property)



Figure 2 Photo of excavation pit with visible blobs of oil present, the surface is about 10 ft by 10 ft and approximately 15 blobs of oil were noted on the surface. This photo was taken 4 days after the excavation was opened.



Figure 3 Conceptual Plan for GAC Adsorption Layer in the Backfill



Attachment 1 – Lab Reports



Analytical Resources, Incorporated
Analytical Chemists and Consultants

02 July 2021

Nick Garson
The Boeing Company
PO Box 3707 M/S 1W-12
Seattle, WA 98124

RE: Boeing Renton Apron R

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
21F0324

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21F0324		Turn-around Requested: 24HR or ASAP		Page: 1 of 1	
ARI Client Company: Boeing		Phone: (425) 269-7866		Date: 6/21/21 Ice Present?	
Client Contact: Nick Pearson		No. of Coolers:		Cooler Temps: 24.7	
Client Project Name: Renton Apron R				Analysis Requested	
Client Project #:		Samplers: JNestle		Notes/Comments	
Sample ID	Date	Time	Matrix	No. Containers	
					VOCS Metals RCRA SUOCs Dx Gx %TS FOG Settable Solids pH for water samples
OF-3 - Surface	6/21/21	1225	W	13	X X X X X X X X pH
OF-3 - Mid	↓	1310	W	13	X X X X X X X pH
OF-3 - Soil	↓	1345	S	10	X X X X X X Hold Diesel & Gas
Comments/Special Instructions For Surface sample - If volume is an issue, please run 1) VOCs 2) metals 3) SUOCs as priority. cc Jen Pearson.		Relinquished by: (Signature) <i>JNestle</i> Printed Name: Justin Nestle Company: CALIBRE Date & Time: 6/21/21 1454		Received by: (Signature) <i>D. Lomnadze</i> Printed Name: Dimitri Lomnadze Company: ARI Date & Time: 06/21/21 1454	
		Relinquished by: (Signature)		Received by: (Signature)	
		Printed Name:		Printed Name:	
		Company:		Company:	
		Date & Time:		Date & Time:	



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Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OF-3-Surface	21F0324-01	Water	21-Jun-2021 12:25	21-Jun-2021 14:54
OF-3-Mid	21F0324-02	Water	21-Jun-2021 13:10	21-Jun-2021 14:54
OF-3-Soil	21F0324-03	Solid	21-Jun-2021 13:45	21-Jun-2021 14:54
Trip Blanks	21F0324-04	Water	21-Jun-2021 12:25	21-Jun-2021 14:54



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Work Order Case Narrative

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Total Metals -

The total metals samples were subcontracted for analysis.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of pH which was sent to the lab outside of the holding time.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Gasoline Range Organics - WA-Ecology Method NW-TPHG

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL and pyrene and 2,4-Dinitrophenol are out of control high. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits with the exception of analytes flagged on the associated forms.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL and 2-Butanone, 2-hexanone, acetone, acrolein, chloromethane and acrylonitrile are out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged on the associated forms.



WORK ORDER

21F0324

Client: The Boeing Company

Project Manager: Kelly Bottem

Project: Boeing Renton Apron A

Project Number: Boeing Renton Apron A

Preservation Confirmation

Container ID	Container Type	pH
21F0324-01 A	Glass NM, Amber, 1000 mL, 9N H2SO4	L2 Pass
21F0324-01 B	Large OJ, 1000 mL	
21F0324-01 C	Small OJ, 500 mL	
21F0324-01 D	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
21F0324-01 E	Glass NM, Amber, 500 mL	
21F0324-01 F	Glass NM, Amber, 500 mL	
21F0324-01 G	Glass NM, Amber, 500 mL	
21F0324-01 H	Glass NM, Amber, 500 mL	
21F0324-01 I	VOA Vial, Clear, 40 mL, HCL	
21F0324-01 J	VOA Vial, Clear, 40 mL, HCL	Bubble
21F0324-01 K	VOA Vial, Clear, 40 mL, HCL	Bubble
21F0324-01 L	VOA Vial, Clear, 40 mL, HCL	Bubble
21F0324-01 M	VOA Vial, Clear, 40 mL, HCL	Bubble
21F0324-02 A	Glass NM, Amber, 1000 mL, 9N H2SO4	L2 Pass
21F0324-02 B	Large OJ, 1000 mL	
21F0324-02 C	Small OJ, 500 mL	
21F0324-02 D	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
21F0324-02 E	Glass NM, Amber, 500 mL	
21F0324-02 F	Glass NM, Amber, 500 mL	
21F0324-02 G	Glass NM, Amber, 500 mL	
21F0324-02 H	Glass NM, Amber, 500 mL	
21F0324-02 I	VOA Vial, Clear, 40 mL, HCL	
21F0324-02 J	VOA Vial, Clear, 40 mL, HCL	
21F0324-02 K	VOA Vial, Clear, 40 mL, HCL	
21F0324-02 L	VOA Vial, Clear, 40 mL, HCL	
21F0324-02 M	VOA Vial, Clear, 40 mL, HCL	
21F0324-03 A	Glass WM, Clear, 8 oz	
21F0324-03 B	Glass WM, Clear, 4 oz	
21F0324-03 C	Glass WM w/septa, Clear, 2 oz	
21F0324-03 D	Glass WM w/septa, Clear, 2 oz	
21F0324-03 E	Glass WM w/septa, Clear, 2 oz	
21F0324-03 F	VOA Vial, Clear, 40 mL, NaHSO4	
21F0324-03 G	VOA Vial, Clear, 40 mL, NaHSO4	
21F0324-03 H	VOA Vial, Clear, 40 mL, MeOH	
21F0324-03 I	VOA Vial, Clear, 40 mL, MeOH	



WORK ORDER

21F0324

Client: The Boeing Company

Project Manager: Kelly Bottem

Project: Boeing Renton Apron A

Project Number: Boeing Renton Apron A

21F0324-03 J VOA Vial, Clear, 40 mL, MeOH

21F0324-04 A VOA Vial, Clear, 40 mL, HCL

21F0324-04 B VOA Vial, Clear, 40 mL, HCL

Isaiah DL

Preservation Confirmed By

06/21/2021

Date



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Boeing

COC No(s): _____ NA

Assigned ARI Job No: 21F0324

Project Name: Penton Apron R

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? _____

YES NO

Were custody papers included with the cooler? _____

YES NO

Were custody papers properly filled out (ink, signed, etc.) _____

YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1454 24.7

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 2226

Cooler Accepted by: DL Date: 06/21/21 Time: 1454

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? _____

YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? _____

NA YES NO

How were bottles sealed in plastic bags? _____

Individually Grouped Not

Did all bottles arrive in good condition (unbroken)? _____

YES NO

Were all bottle labels complete and legible? _____

YES NO

Did the number of containers listed on COC match with the number of containers received? _____

YES NO

Did all bottle labels and tags agree with custody papers? _____

YES NO

Were all bottles used correct for the requested analyses? _____

YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...

NA YES NO

Were all VOC vials free of air bubbles? _____

NA YES NO

Was sufficient amount of sample sent in each bottle? _____

YES NO

Date VOC Trip Blank was made at ARI: _____

NA DL 06/21/21

Were the sample(s) split by ARI? NA YES

Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: DL Date: 06/21/21 Time: 1650 Labels checked by: _____

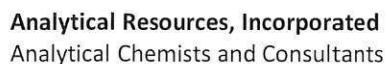
**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Brought in extra vials not listed on the COC & w/ no labels.*
4 vials have air bubbles, lab to determine size.
TBS not listed on COC, logged as final sample.

By: DL Date: 06/21/21 *Extra container cannot sent to PM to see if billing is necessary.



Cooler Temperature Compliance Form

Completed by: DL Date: 06/21/21 Time: 1454
00070F Cooler Temperature Compliance Form Vers



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:26

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 21F0324-01 L

Preparation Batch: BJF0604

Sample Size: 10 mL

Prepared: 06/22/2021

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.27	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	0.74	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.18	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.13	0.20	ND	ug/L	U
Acrolein	107-02-8	1	2.70	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.11	0.20	ND	ug/L	U
Acetone	67-64-1	1	4.33	5.00	6.42	ug/L	Q
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	0.43	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	0.53	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	0.40	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.12	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.12	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.09	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	1.77	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.11	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.05	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.09	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.08	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.09	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.09	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.07	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.09	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.06	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	0.55	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	1.90	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.09	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	0.12	ug/L	J
trans-1,3-Dichloropropene	10061-02-6	1	0.09	0.20	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	2.06	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.10	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.07	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.09	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.09	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.06	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.09	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.09	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.15	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.10	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.16	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	0.60	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.07	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.07	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.07	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.06	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.06	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.07	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.07	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.10	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.06	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.08	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.08	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.10	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.18	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.08	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.39	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.21	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.41	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.27	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.25	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.13	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.14	0.50	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	2.34	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				80-129 %	104	%	
Surrogate: Toluene-d8				80-120 %	93.9	%	
Surrogate: 4-Bromofluorobenzene				80-120 %	88.9	%	
Surrogate: 1,2-Dichlorobenzene-d4				80-120 %	103	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Volatile Organic Compounds

Method: NWTPHg	Sampled: 06/21/2021 12:25
Instrument: NT2 Analyst: LH	Analyzed: 06/22/2021 12:26
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap) Extract ID: 21F0324-01 I
	Preparation Batch: BJF0604 Sample Size: 10 mL
	Prepared: 06/22/2021 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	93.9	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	88.9	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 12:25

Instrument: NT6 Analyst: JZ

Analyzed: 06/23/2021 14:12

Sample Preparation:

Preparation Method: EPA 3520C (Liq Liq)

Extract ID: 21F0324-01 G 01

Preparation Batch: BJF0589

Sample Size: 500 mL

Prepared: 06/22/2021

Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	3	6.4	30.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	3	10.7	30.0	ND	ug/L	U
2-Chlorophenol	95-57-8	3	11.0	30.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	3	8.4	30.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	3	8.6	30.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	3	29.1	60.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	3	9.3	30.0	ND	ug/L	U
2-Methylphenol	95-48-7	3	10.0	30.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	3	15.9	30.0	ND	ug/L	U
4-Methylphenol	106-44-5	3	13.2	60.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	3	6.4	30.0	ND	ug/L	U
Hexachloroethane	67-72-1	3	8.7	60.0	ND	ug/L	U
Nitrobenzene	98-95-3	3	12.5	30.0	ND	ug/L	U
Isophorone	78-59-1	3	14.3	30.0	ND	ug/L	U
2-Nitrophenol	88-75-5	3	15.1	90.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	3	31.1	90.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	3	17.8	30.0	ND	ug/L	U
Benzoic acid	65-85-0	3	103	600	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	3	55.8	90.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	3	9.5	30.0	ND	ug/L	U
Naphthalene	91-20-3	3	7.4	30.0	ND	ug/L	U
4-Chloroaniline	106-47-8	3	58.1	150	ND	ug/L	U
Hexachlorobutadiene	87-68-3	3	4.2	90.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	3	60.0	90.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	3	7.1	30.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	3	75.9	150	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	3	58.4	90.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	3	54.1	150	ND	ug/L	U
2-Chloronaphthalene	91-58-7	3	14.2	30.0	ND	ug/L	U
2-Nitroaniline	88-74-4	3	59.8	90.0	ND	ug/L	U
Dimethylphthalate	131-11-3	3	11.8	30.0	ND	ug/L	U
Acenaphthylene	208-96-8	3	10.3	30.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	3	63.7	90.0	ND	ug/L	U
3-Nitroaniline	99-09-2	3	65.1	90.0	ND	ug/L	U
Acenaphthene	83-32-9	3	8.9	30.0	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 12:25

Instrument: NT6 Analyst: JZ

Analyzed: 06/23/2021 14:12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,4-Dinitrophenol	51-28-5	3	146	600	ND	ug/L	U
Dibenzofuran	132-64-9	3	8.0	30.0	ND	ug/L	U
4-Nitrophenol	100-02-7	3	30.2	300	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	3	58.6	90.0	ND	ug/L	U
Fluorene	86-73-7	3	10.3	30.0	ND	ug/L	U
Diethyl phthalate	84-66-2	3	12.7	30.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	3	11.3	30.0	ND	ug/L	U
4-Nitroaniline	100-01-6	3	58.2	90.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	3	150	300	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	3	12.2	30.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	3	10.4	30.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	3	12.5	30.0	ND	ug/L	U
Pentachlorophenol	87-86-5	3	77.3	300	ND	ug/L	U
Phenanthrene	85-01-8	3	7.1	30.0	17.4	ug/L	J, D
Anthracene	120-12-7	3	12.0	30.0	ND	ug/L	U
Carbazole	86-74-8	3	17.9	30.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	3	15.0	30.0	ND	ug/L	U
Fluoranthene	206-44-0	3	12.5	30.0	ND	ug/L	U
Pyrene	129-00-0	3	9.3	30.0	29.4	ug/L	J, D
Butylbenzylphthalate	85-68-7	3	11.9	30.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	3	12.0	30.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	3	48.6	150	ND	ug/L	U
Chrysene	218-01-9	3	11.0	30.0	19.3	ug/L	D, J
bis(2-Ethylhexyl)phthalate	117-81-7	3	15.8	90.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	3	10.9	30.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	3	14.6	30.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	3	11.9	30.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	3	12.9	30.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	3	13.8	30.0	ND	ug/L	U
Benzo(a)fluoranthene, Total		3	24.9	60.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	3	8.1	30.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>					33-120 %	85.7 %	
<i>Surrogate: Phenol-d5</i>					38-120 %	76.7 %	
<i>Surrogate: 2-Chlorophenol-d4</i>					41-120 %	93.5 %	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>					20-120 %	92.7 %	
<i>Surrogate: Nitrobenzene-d5</i>					27-120 %	97.9 %	
<i>Surrogate: 2-Fluorobiphenyl</i>					33-120 %	94.4 %	
<i>Surrogate: 2,4,6-Tribromophenol</i>					52-120 %	88.5 %	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 12:25

Instrument: NT6 Analyst: JZ

Analyzed: 06/23/2021 14:12

Analyte	CAS Number	Recovery	Recovery	Units	Notes
		Limits			
Surrogate: p-Terphenyl-d14		28-120 %	91.2	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx

Sampled: 06/21/2021 12:25

Instrument: FID4 Analyst: CTO

Analyzed: 06/23/2021 11:25

Sample Preparation:

Preparation Method: EPA 3510C SepF

Extract ID: 21F0324-01 E 01

Preparation Batch: BJF0588

Sample Size: 500 mL

Prepared: 06/22/2021

Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	2.50	7.40	mg/L	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	5	5.00	13.2	mg/L	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			50-150 %	71.1	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Wet Chemistry

Method: EPA 1664B

Sampled: 06/21/2021 12:25

Instrument: Bal2 Analyst: UW

Analyzed: 06/22/2021 10:17

Sample Preparation:

Preparation Method: EPA 3535A SPE (Solid Phase Extraction)

Extract ID: 21F0324-01

Preparation Batch: BJF0596

Sample Size: 1030 mL

Prepared: 06/22/2021

Final Volume: 1000 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
HEM Oil & Grease		1	5	5	110	mg/L	
SGT-HEM NP Oil & Grease		1	5	5	55	mg/L	
HEM Polar Oil & Grease		1	5	5	55	mg/L	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Wet Chemistry

Method: SM 2540 F-97

Sampled: 06/21/2021 12:25

Instrument: N/A Analyst: DOE

Analyzed: 06/22/2021 09:59

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 21F0324-01

Preparation Batch: BJF0595

Sample Size: 910 mL

Prepared: 06/22/2021

Final Volume: 1000 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Settleable Solids		1	0.1	0.1	2.7	mL/L	



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Surface
21F0324-01 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00	Sampled: 06/21/2021 12:25
Instrument: Accumet AB150 Analyst: UW	Analyzed: 06/21/2021 17:45
Sample Preparation:	Extract ID: 21F0324-01 C
Preparation Method: No Prep Wet Chem	
Preparation Batch: BJF0581	Sample Size: 50 mL
Prepared: 06/21/2021	Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	7.14	pH Units	H



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 13:10

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:47

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 21F0324-02 I

Preparation Batch: BJF0604

Sample Size: 10 mL

Prepared: 06/22/2021

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.27	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	0.74	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.18	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.13	0.20	ND	ug/L	U
Acrolein	107-02-8	1	2.70	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.11	0.20	ND	ug/L	U
Acetone	67-64-1	1	4.33	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	0.43	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	0.53	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	0.40	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.12	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.12	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.09	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	1.77	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.11	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.05	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.09	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.08	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.09	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.09	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.07	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.09	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.06	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	0.55	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	1.90	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.09	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.09	0.20	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 13:10

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:47

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	2.06	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.10	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.07	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.09	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.09	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.06	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.09	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.09	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.15	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.10	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.16	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	0.60	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.07	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.07	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.07	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.06	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.06	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.07	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.07	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.10	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.06	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.08	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.08	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.10	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.18	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.08	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.39	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.21	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.41	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.27	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.25	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.13	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.14	0.50	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 13:10

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 12:47

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	2.34	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				80-129 %	103	%	
Surrogate: Toluene-d8				80-120 %	93.1	%	
Surrogate: 4-Bromofluorobenzene				80-120 %	89.0	%	
Surrogate: 1,2-Dichlorobenzene-d4				80-120 %	104	%	



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PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Volatile Organic Compounds

Method: NWTPHg	Sampled: 06/21/2021 13:10
Instrument: NT2 Analyst: LH	Analyzed: 06/22/2021 12:47
Sample Preparation:	Extract ID: 21F0324-02 I
Preparation Method: EPA 5030C (Purge and Trap)	
Preparation Batch: BJF0604	Sample Size: 10 mL
Prepared: 06/22/2021	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	93.1	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	89.0	%	



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E
Instrument: NT6 Analyst: JZ

Sampled: 06/21/2021 13:10

Analyzed: 06/23/2021 13:31

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BJF0589 Sample Size: 500 mL
Prepared: 06/22/2021 Final Volume: 0.5 mL

Extract ID: 21F0324-02 G 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	0.2	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	0.4	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	0.4	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.3	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.3	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	1.0	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.3	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	0.3	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	0.5	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	0.4	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	0.2	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	0.3	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	0.4	1.0	ND	ug/L	U
Isophorone	78-59-1	1	0.5	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	0.5	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	1.0	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	0.6	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	3.4	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	1.9	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.3	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	0.2	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	1.9	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	0.1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	2.0	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	0.2	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	2.5	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	1.9	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	1.8	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	0.5	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	2.0	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	0.4	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	0.3	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	2.1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	2.2	3.0	ND	ug/L	U
Acenaphthene	83-32-9	1	0.3	1.0	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 13:10

Instrument: NT6 Analyst: JZ

Analyzed: 06/23/2021 13:31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,4-Dinitrophenol	51-28-5	1	4.9	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	0.3	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	1.0	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	2.0	3.0	ND	ug/L	U
Fluorene	86-73-7	1	0.3	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	0.4	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	0.4	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	1.9	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	5.0	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	0.4	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	0.3	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	0.4	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	2.6	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	0.2	1.0	ND	ug/L	U
Anthracene	120-12-7	1	0.4	1.0	ND	ug/L	U
Carbazole	86-74-8	1	0.6	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	0.5	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	0.4	1.0	ND	ug/L	U
Pyrene	129-00-0	1	0.3	1.0	0.7	ug/L	J
Butylbenzylphthalate	85-68-7	1	0.4	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	0.4	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	1.6	5.0	ND	ug/L	U
Chrysene	218-01-9	1	0.4	1.0	0.6	ug/L	J
bis(2-Ethylhexyl)phthalate	117-81-7	1	0.5	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	0.4	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	0.5	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.4	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	0.4	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	0.5	1.0	ND	ug/L	U
Benzo(a)fluoranthene, Total		1	0.8	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	0.3	1.0	ND	ug/L	U
Surrogate: 2-Fluorophenol					33-120 %	67.8 %	
Surrogate: Phenol-d5					38-120 %	70.6 %	
Surrogate: 2-Chlorophenol-d4					41-120 %	75.5 %	
Surrogate: 1,2-Dichlorobenzene-d4					20-120 %	68.9 %	
Surrogate: Nitrobenzene-d5					27-120 %	73.2 %	
Surrogate: 2-Fluorobiphenyl					33-120 %	79.0 %	
Surrogate: 2,4,6-Tribromophenol					52-120 %	91.9 %	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 13:10

Instrument: NT6 Analyst: JZ

Analyzed: 06/23/2021 13:31

Analyte	CAS Number	Recovery	Recovery	Units	Notes
		Limits			
Surrogate: p-Terphenyl-d14		28-120 %	89.4	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx

Sampled: 06/21/2021 13:10

Instrument: FID4 Analyst: CTO

Analyzed: 06/23/2021 11:46

Sample Preparation:

Preparation Method: EPA 3510C SepF

Extract ID: 21F0324-02 E 01

Preparation Batch: BJF0588

Sample Size: 500 mL

Prepared: 06/22/2021

Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	0.382	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	0.524	mg/L	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			50-150 %	77.6	%	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Wet Chemistry

Method: EPA 1664B

Sampled: 06/21/2021 13:10

Instrument: Bal2 Analyst: UW

Analyzed: 06/22/2021 10:17

Sample Preparation:

Preparation Method: EPA 3535A SPE (Solid Phase Extraction)

Extract ID: 21F0324-02

Preparation Batch: BJF0596

Sample Size: 1065 mL

Prepared: 06/22/2021

Final Volume: 1000 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
HEM Oil & Grease		1	5	5	ND	mg/L	U
SGT-HEM NP Oil & Grease		1	5	5	ND	mg/L	U
HEM Polar Oil & Grease		1	5	5	ND	mg/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Wet Chemistry

Method: SM 2540 F-97

Sampled: 06/21/2021 13:10

Instrument: N/A Analyst: DOE

Analyzed: 06/22/2021 09:59

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 21F0324-02

Preparation Batch: BJF0595

Sample Size: 910 mL

Prepared: 06/22/2021

Final Volume: 1000 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Settleable Solids		1	0.1	0.1	ND	mL/L	U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Mid
21F0324-02 (Water)

Wet Chemistry

Method: SM 4500-H+ B-00	Sampled: 06/21/2021 13:10
Instrument: Accumet AB150 Analyst: UW	Analyzed: 06/21/2021 17:45
Sample Preparation:	Extract ID: 21F0324-02 C
Preparation Method: No Prep Wet Chem	
Preparation Batch: BJF0581	Sample Size: 50 mL
Prepared: 06/21/2021	Final Volume: 50 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
pH		1	0.01	0.01	6.96	pH Units	H



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT5 Analyst: PB
Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate)
Preparation Batch: BJF0636 Sample Size: 4.4 g (wet)
Prepared: 06/23/2021 Final Volume: 5 mL
Extract ID: 21F0324-03 F
Dry Weight: 3.75 g
% Solids: 85.22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.51	1.33	ND	ug/kg	U
Vinyl Chloride	75-01-4	1	0.45	1.33	ND	ug/kg	U
Bromomethane	74-83-9	1	0.52	1.33	ND	ug/kg	U
Chloroethane	75-00-3	1	1.66	2.67	ND	ug/kg	U
Trichlorofluoromethane	75-69-4	1	1.30	2.67	ND	ug/kg	U
Acrolein	107-02-8	1	2.34	6.67	ND	ug/kg	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	1.13	2.67	ND	ug/kg	U
Acetone	67-64-1	1	8.46	13.3	96.9	ug/kg	
1,1-Dichloroethene	75-35-4	1	0.49	1.33	ND	ug/kg	U
Iodomethane	74-88-4	1	1.21	1.33	ND	ug/kg	U
Methylene Chloride	75-09-2	1	5.82	6.67	ND	ug/kg	U
Acrylonitrile	107-13-1	1	2.64	6.67	ND	ug/kg	U
Carbon Disulfide	75-15-0	1	0.44	1.33	1.68	ug/kg	
trans-1,2-Dichloroethene	156-60-5	1	0.70	1.33	ND	ug/kg	U
Vinyl Acetate	108-05-4	1	4.34	6.67	ND	ug/kg	U
1,1-Dichloroethane	75-34-3	1	0.38	1.33	ND	ug/kg	U
2-Butanone	78-93-3	1	3.25	6.67	6.43	ug/kg	J
2,2-Dichloropropane	594-20-7	1	0.41	1.33	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.34	1.33	ND	ug/kg	U
Chloroform	67-66-3	1	0.38	1.33	ND	ug/kg	U
Bromochloromethane	74-97-5	1	0.53	1.33	ND	ug/kg	U
1,1,1-Trichloroethane	71-55-6	1	0.80	1.33	ND	ug/kg	U
1,1-Dichloropropene	563-58-6	1	0.38	1.33	ND	ug/kg	U
Carbon tetrachloride	56-23-5	1	0.42	1.33	ND	ug/kg	U
1,2-Dichloroethane	107-06-2	1	0.31	1.33	ND	ug/kg	U
Benzene	71-43-2	1	0.22	1.33	0.59	ug/kg	J
Trichloroethene	79-01-6	1	0.34	1.33	ND	ug/kg	U
1,2-Dichloropropane	78-87-5	1	0.44	1.33	ND	ug/kg	U
Bromodichloromethane	75-27-4	1	0.34	1.33	ND	ug/kg	U
Dibromomethane	74-95-3	1	0.47	1.33	ND	ug/kg	U
2-Chloroethyl vinyl ether	110-75-8	1	4.02	6.67	ND	ug/kg	U
4-Methyl-2-Pentanone	108-10-1	1	1.82	6.67	ND	ug/kg	U
cis-1,3-Dichloropropene	10061-01-5	1	0.35	1.33	ND	ug/kg	U
Toluene	108-88-3	1	0.33	1.33	0.61	ug/kg	J
trans-1,3-Dichloropropene	10061-02-6	1	0.55	1.33	ND	ug/kg	U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 13:45

Instrument: NT5 Analyst: PB

Analyzed: 06/23/2021 15:16

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	1.70	6.67	ND	ug/kg	U
1,1,2-Trichloroethane	79-00-5	1	0.36	1.33	ND	ug/kg	U
1,3-Dichloropropane	142-28-9	1	0.31	1.33	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.26	1.33	ND	ug/kg	U
Dibromochloromethane	124-48-1	1	0.36	1.33	ND	ug/kg	U
1,2-Dibromoethane	106-93-4	1	0.41	1.33	ND	ug/kg	U
Chlorobenzene	108-90-7	1	0.28	1.33	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.33	ND	ug/kg	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.47	1.33	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.66	2.67	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.33	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.93	2.67	ND	ug/kg	U
Styrene	100-42-5	1	0.33	1.33	ND	ug/kg	U
Bromoform	75-25-2	1	0.62	1.33	ND	ug/kg	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.37	1.33	ND	ug/kg	U
1,2,3-Trichloropropane	96-18-4	1	2.00	2.67	ND	ug/kg	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	3.67	6.67	ND	ug/kg	U
n-Propylbenzene	103-65-1	1	0.31	1.33	ND	ug/kg	U
Bromobenzene	108-86-1	1	0.33	1.33	ND	ug/kg	U
Isopropyl Benzene	98-82-8	1	0.35	1.33	ND	ug/kg	U
2-Chlorotoluene	95-49-8	1	0.29	1.33	ND	ug/kg	U
4-Chlorotoluene	106-43-4	1	0.39	1.33	ND	ug/kg	U
t-Butylbenzene	98-06-6	1	0.33	1.33	ND	ug/kg	U
1,3,5-Trimethylbenzene	108-67-8	1	0.34	1.33	ND	ug/kg	U
1,2,4-Trimethylbenzene	95-63-6	1	0.35	1.33	0.47	ug/kg	J
s-Butylbenzene	135-98-8	1	0.32	1.33	ND	ug/kg	U
4-Isopropyl Toluene	99-87-6	1	0.39	1.33	0.71	ug/kg	J
1,3-Dichlorobenzene	541-73-1	1	0.33	1.33	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	0.57	1.33	ND	ug/kg	U
n-Butylbenzene	104-51-8	1	0.37	1.33	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	0.87	1.33	ND	ug/kg	U
1,2-Dibromo-3-chloropropane	96-12-8	1	3.15	6.67	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	2.42	6.67	ND	ug/kg	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.40	6.67	ND	ug/kg	U
Naphthalene	91-20-3	1	3.28	6.67	ND	ug/kg	U
1,2,3-Trichlorobenzene	87-61-6	1	3.10	6.67	ND	ug/kg	U
Dichlorodifluoromethane	75-71-8	1	0.54	1.33	ND	ug/kg	U
Methyl tert-butyl Ether	1634-04-4	1	0.34	1.33	ND	ug/kg	U



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 13:45

Instrument: NT5 Analyst: PB

Analyzed: 06/23/2021 15:16

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	2.86	6.67	3.10	ug/kg	J
Surrogate: 1,2-Dichloroethane-d4				80-149 %	105	%	
Surrogate: Toluene-d8				77-120 %	96.5	%	
Surrogate: 4-Bromofluorobenzene				80-120 %	95.0	%	
Surrogate: 1,2-Dichlorobenzene-d4				80-120 %	98.9	%	



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E		Sampled: 06/21/2021 13:45	
Instrument: NT6 Analyst: JZ		Analyzed: 06/24/2021 21:19	
Sample Preparation:	Preparation Method: EPA 3546 (Microwave)	Extract ID: 21F0324-03 A 02	
	Preparation Batch: BJF0626	Dry Weight: 7.54 g	
	Prepared: 06/23/2021	% Solids: 85.22	
Sample Cleanup:	Cleanup Method: GPC	Extract ID: 21F0324-03 A 02	
	Cleanup Batch: CJF0188	Initial Volume: 5 uL	
	Cleaned: 24-Jun-2021	Final Volume: 5 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	3	480	2000	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	3	504	2000	ND	ug/kg	U
2-Chlorophenol	95-57-8	3	427	2000	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	3	468	2000	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	3	465	2000	ND	ug/kg	U
Benzyl Alcohol	100-51-6	3	2590	9840	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	3	549	2000	ND	ug/kg	U
2-Methylphenol	95-48-7	3	695	2000	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	3	558	2000	ND	ug/kg	U
4-Methylphenol	106-44-5	3	668	2000	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	3	621	2000	ND	ug/kg	U
Hexachloroethane	67-72-1	3	561	2000	ND	ug/kg	U
Nitrobenzene	98-95-3	3	764	2000	ND	ug/kg	U
Isophorone	78-59-1	3	400	2000	ND	ug/kg	U
2-Nitrophenol	88-75-5	3	1890	2000	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	3	483	2000	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	3	516	2000	ND	ug/kg	U
Benzoic acid	65-85-0	3	7490	20000	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	3	2230	9840	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	3	474	2000	ND	ug/kg	U
Naphthalene	91-20-3	3	445	2000	ND	ug/kg	U
4-Chloroaniline	106-47-8	3	2980	9840	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	3	561	2000	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	3	3430	9840	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	3	728	2000	8210	ug/kg	D
Hexachlorocyclopentadiene	77-47-4	3	1860	9840	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	3	4240	9840	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	3	4470	9840	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	3	635	2000	ND	ug/kg	U
2-Nitroaniline	88-74-4	3	3580	9840	ND	ug/kg	U
Dimethylphthalate	131-11-3	3	791	2000	ND	ug/kg	U
Acenaphthylene	208-96-8	3	629	2000	ND	ug/kg	U



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 13:45

Instrument: NT6 Analyst: JZ

Analyzed: 06/24/2021 21:19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,6-Dinitrotoluene	606-20-2	3	2860	9840	ND	ug/kg	U
3-Nitroaniline	99-09-2	3	3100	9840	ND	ug/kg	U
Acenaphthene	83-32-9	3	489	2000	1010	ug/kg	D, J
2,4-Dinitrophenol	51-28-5	3	2310	20000	ND	ug/kg	U
Dibenzofuran	132-64-9	3	543	2000	ND	ug/kg	U
4-Nitrophenol	100-02-7	3	1440	9840	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	3	2860	9840	ND	ug/kg	U
Fluorene	86-73-7	3	465	2000	1400	ug/kg	D, J
Diethyl phthalate	84-66-2	3	624	2000	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	3	612	2000	ND	ug/kg	U
4-Nitroaniline	100-01-6	3	3040	9840	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	3	3640	20000	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	3	504	2000	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	3	576	2000	ND	ug/kg	U
Hexachlorobenzene	118-74-1	3	564	2000	ND	ug/kg	U
Pentachlorophenol	87-86-5	3	2880	9840	ND	ug/kg	U
Phenanthrene	85-01-8	3	597	2000	4260	ug/kg	D
Anthracene	120-12-7	3	603	2000	1550	ug/kg	D, J
Carbazole	86-74-8	3	439	2000	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	3	987	2000	ND	ug/kg	U
Fluoranthene	206-44-0	3	1240	2000	ND	ug/kg	U
Pyrene	129-00-0	3	1400	2000	5640	ug/kg	Q, D
Butylbenzylphthalate	85-68-7	3	734	2000	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	3	579	2000	1790	ug/kg	D, J
3,3'-Dichlorobenzidine	91-94-1	3	2660	9840	ND	ug/kg	U
Chrysene	218-01-9	3	626	2000	3280	ug/kg	D
bis(2-Ethylhexyl)phthalate	117-81-7	3	713	2000	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	3	570	2000	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	3	624	2000	935	ug/kg	J, D
Indeno(1,2,3-cd)pyrene	193-39-5	3	805	2000	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	3	734	2000	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	3	773	2000	ND	ug/kg	U
Benzofluoranthenes, Total		3	970	2000	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	3	859	2000	6260	ug/kg	D
Surrogate: 2-Fluorophenol				22-120 %	65.3	%	
Surrogate: Phenol-d5				27-120 %	58.7	%	
Surrogate: 2-Chlorophenol-d4				36-120 %	74.3	%	
Surrogate: 1,2-Dichlorobenzene-d4				38-120 %	83.8	%	



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

OF-3-Soil
21F0324-03 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 06/21/2021 13:45

Instrument: NT6 Analyst: JZ

Analyzed: 06/24/2021 21:19

Analyte	CAS Number	Recovery	Recovery	Units	Notes
		Limits			
Surrogate: Nitrobenzene-d5		32-120 %	79.7	%	
Surrogate: 2-Fluorobiphenyl		39-120 %	94.9	%	
Surrogate: 2,4,6-Tribromophenol		31-131 %	72.9	%	
Surrogate: p-Terphenyl-d14		31-130 %	95.2	%	



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Trip Blanks
21F0324-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 11:44

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 21F0324-04 A

Preparation Batch: BJF0604

Sample Size: 10 mL

Prepared: 06/22/2021

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.27	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	0.74	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.18	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.13	0.20	ND	ug/L	U
Acrolein	107-02-8	1	2.70	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.11	0.20	ND	ug/L	U
Acetone	67-64-1	1	4.33	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	0.43	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	0.53	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	0.40	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.12	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.12	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.09	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	1.77	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.11	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.05	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.09	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.08	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.09	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.09	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.07	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.09	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.06	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	0.55	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	1.90	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.09	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.09	0.20	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Trip Blanks
21F0324-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 11:44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	2.06	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.10	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.07	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.09	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.09	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.06	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.09	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.09	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.15	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.10	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.16	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	0.60	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.07	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.07	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.07	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.06	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.06	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.07	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.07	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.10	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.06	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.08	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.08	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.10	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.18	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.08	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.39	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.21	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.41	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.27	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.25	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.13	0.20	ND	ug/L	U
Methyl tert-butyl Ether	1634-04-4	1	0.14	0.50	ND	ug/L	U



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Trip Blanks
21F0324-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 06/21/2021 12:25

Instrument: NT2 Analyst: LH

Analyzed: 06/22/2021 11:44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2-Pentanone	107-87-9	1	2.34	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				80-129 %	104	%	
Surrogate: Toluene-d8				80-120 %	93.8	%	
Surrogate: 4-Bromofluorobenzene				80-120 %	88.4	%	
Surrogate: 1,2-Dichlorobenzene-d4				80-120 %	105	%	



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0604-BLK1)		Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 11:24								
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.74		ug/L	5.00		94.9	80-120			
Surrogate: 4-Bromofluorobenzene	4.42		ug/L	5.00		88.3	80-120			
Blank (BJF0604-BLK2)		Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 11:24								
Chloromethane	ND	0.27	0.50	ug/L						U
Vinyl Chloride	ND	0.08	0.20	ug/L						U
Bromomethane	ND	0.74	1.00	ug/L						U
Chloroethane	ND	0.18	0.20	ug/L						U
Trichlorofluoromethane	ND	0.13	0.20	ug/L						U
Acrolein	ND	2.70	5.00	ug/L						U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.11	0.20	ug/L						U
Acetone	ND	4.33	5.00	ug/L						U
1,1-Dichloroethene	ND	0.08	0.20	ug/L						U
Iodomethane	ND	0.43	1.00	ug/L						U
Methylene Chloride	ND	0.53	1.00	ug/L						U
Acrylonitrile	ND	0.40	1.00	ug/L						U
Carbon Disulfide	ND	0.12	0.20	ug/L						U
trans-1,2-Dichloroethene	ND	0.07	0.20	ug/L						U
Vinyl Acetate	ND	0.12	0.20	ug/L						U
1,1-Dichloroethane	ND	0.09	0.20	ug/L						U
2-Butanone	ND	1.77	5.00	ug/L						U
2,2-Dichloropropane	ND	0.11	0.20	ug/L						U
cis-1,2-Dichloroethene	ND	0.08	0.20	ug/L						U
Chloroform	ND	0.05	0.20	ug/L						U
Bromochloromethane	ND	0.09	0.20	ug/L						U
1,1,1-Trichloroethane	ND	0.08	0.20	ug/L						U
1,1-Dichloropropene	ND	0.09	0.20	ug/L						U
Carbon tetrachloride	ND	0.09	0.20	ug/L						U
1,2-Dichloroethane	ND	0.08	0.20	ug/L						U
Benzene	ND	0.05	0.20	ug/L						U
Trichloroethene	ND	0.07	0.20	ug/L						U
1,2-Dichloropropane	ND	0.07	0.20	ug/L						U
Bromodichloromethane	ND	0.09	0.20	ug/L						U
Dibromomethane	ND	0.06	0.20	ug/L						U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0604-BLK2)						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 11:24					
2-Chloroethyl vinyl ether	ND	0.55	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	1.90	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.09	0.20	ug/L							U
Toluene	ND	0.05	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.09	0.20	ug/L							U
2-Hexanone	ND	2.06	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.10	0.20	ug/L							U
1,3-Dichloropropane	ND	0.07	0.20	ug/L							U
Tetrachloroethene	ND	0.09	0.20	ug/L							U
Dibromochloromethane	ND	0.09	0.20	ug/L							U
1,2-Dibromoethane	ND	0.09	0.20	ug/L							U
Chlorobenzene	ND	0.06	0.20	ug/L							U
Ethylbenzene	ND	0.05	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.09	0.20	ug/L							U
m,p-Xylene	ND	0.14	0.40	ug/L							U
o-Xylene	ND	0.08	0.20	ug/L							U
Xylenes, total	ND	0.22	0.60	ug/L							U
Styrene	ND	0.09	0.20	ug/L							U
Bromoform	ND	0.15	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.10	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.16	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	0.60	1.00	ug/L							U
n-Propylbenzene	ND	0.07	0.20	ug/L							U
Bromobenzene	ND	0.07	0.20	ug/L							U
Isopropyl Benzene	ND	0.07	0.20	ug/L							U
2-Chlorotoluene	ND	0.06	0.20	ug/L							U
4-Chlorotoluene	ND	0.06	0.20	ug/L							U
t-Butylbenzene	ND	0.07	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.07	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.10	0.20	ug/L							U
s-Butylbenzene	ND	0.06	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.08	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.08	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.10	0.20	ug/L							U
n-Butylbenzene	ND	0.18	0.20	ug/L							U



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0604-BLK2)											
						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 11:24					
1,2-Dichlorobenzene	ND	0.08	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.39	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.21	0.50	ug/L							U
Hexachloro-1,3-Butadiene	0.42	0.41	0.50	ug/L							J
Naphthalene	ND	0.27	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.25	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.13	0.20	ug/L							U
Methyl tert-butyl Ether	ND	0.14	0.50	ug/L							U
2-Pentanone	ND	2.34	5.00	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.19			ug/L	5.00		104	80-129			
Surrogate: Toluene-d8	4.74			ug/L	5.00		94.9	80-120			
Surrogate: 4-Bromofluorobenzene	4.42			ug/L	5.00		88.3	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.11			ug/L	5.00		102	80-120			
LCS (BJF0604-BS1)											
						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 09:40					
Gasoline Range Organics (Tol-Nap)	1070		100	ug/L	1000		107	72-128			
Surrogate: Toluene-d8	4.92			ug/L	5.00		98.4	80-120			
Surrogate: 4-Bromofluorobenzene	4.71			ug/L	5.00		94.3	80-120			
LCS (BJF0604-BS2)											
						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 10:00					
Chloromethane	7.48	0.27	0.50	ug/L	10.0		74.8	60-138			Q
Vinyl Chloride	11.3	0.08	0.20	ug/L	10.0		113	66-133			
Bromomethane	11.2	0.74	1.00	ug/L	10.0		112	72-131			
Chloroethane	10.6	0.18	0.20	ug/L	10.0		106	60-155			
Trichlorofluoromethane	12.3	0.13	0.20	ug/L	10.0		123	62-141			Q
Acrolein	37.8	2.70	5.00	ug/L	50.0		75.7	52-190			Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	15.6	0.11	0.20	ug/L	10.0		156	76-129			*, Q
Acetone	33.8	4.33	5.00	ug/L	50.0		67.5	58-142			Q
1,1-Dichloroethene	11.8	0.08	0.20	ug/L	10.0		118	69-135			
Iodomethane	11.6	0.43	1.00	ug/L	10.0		116	56-147			
Methylene Chloride	10.1	0.53	1.00	ug/L	10.0		101	65-135			
Acrylonitrile	7.09	0.40	1.00	ug/L	10.0		70.9	64-134			Q
Carbon Disulfide	11.9	0.12	0.20	ug/L	10.0		119	78-125			
trans-1,2-Dichloroethene	10.8	0.07	0.20	ug/L	10.0		108	78-128			
Vinyl Acetate	7.39	0.12	0.20	ug/L	10.0		73.9	55-138			Q



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0604-BS2)						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 10:00					
1,1-Dichloroethane	10.2	0.09	0.20	ug/L	10.0		102	76-124			
2-Butanone	32.3	1.77	5.00	ug/L	50.0		64.6	61-140			Q
2,2-Dichloropropane	12.3	0.11	0.20	ug/L	10.0		123	66-147			Q
cis-1,2-Dichloroethene	9.99	0.08	0.20	ug/L	10.0		99.9	80-121			
Chloroform	10.6	0.05	0.20	ug/L	10.0		106	80-122			
Bromochloromethane	10.8	0.09	0.20	ug/L	10.0		108	80-121			
1,1,1-Trichloroethane	11.8	0.08	0.20	ug/L	10.0		118	79-123			
1,1-Dichloropropene	11.5	0.09	0.20	ug/L	10.0		115	80-127			
Carbon tetrachloride	12.4	0.09	0.20	ug/L	10.0		124	53-137			Q
1,2-Dichloroethane	9.62	0.08	0.20	ug/L	10.0		96.2	75-123			
Benzene	10.6	0.05	0.20	ug/L	10.0		106	80-120			
Trichloroethene	11.5	0.07	0.20	ug/L	10.0		115	80-120			
1,2-Dichloropropane	9.83	0.07	0.20	ug/L	10.0		98.3	80-120			
Bromodichloromethane	10.7	0.09	0.20	ug/L	10.0		107	80-121			
Dibromomethane	10.5	0.06	0.20	ug/L	10.0		105	80-120			
2-Chloroethyl vinyl ether	8.88	0.55	1.00	ug/L	10.0		88.8	64-120			
4-Methyl-2-Pentanone	43.7	1.90	5.00	ug/L	50.0		87.4	67-133			
cis-1,3-Dichloropropene	10.7	0.09	0.20	ug/L	10.0		107	80-124			
Toluene	10.6	0.05	0.20	ug/L	10.0		106	80-120			
trans-1,3-Dichloropropene	11.1	0.09	0.20	ug/L	10.0		111	71-127			
2-Hexanone	34.8	2.06	5.00	ug/L	50.0		69.7	69-133			Q
1,1,2-Trichloroethane	10.2	0.10	0.20	ug/L	10.0		102	80-121			
1,3-Dichloropropane	9.65	0.07	0.20	ug/L	10.0		96.5	80-120			
Tetrachloroethene	12.0	0.09	0.20	ug/L	10.0		120	80-120			
Dibromochloromethane	10.7	0.09	0.20	ug/L	10.0		107	65-135			
1,2-Dibromoethane	10.3	0.09	0.20	ug/L	10.0		103	80-121			
Chlorobenzene	10.7	0.06	0.20	ug/L	10.0		107	80-120			
Ethylbenzene	10.6	0.05	0.20	ug/L	10.0		106	80-120			
1,1,1,2-Tetrachloroethane	10.6	0.09	0.20	ug/L	10.0		106	80-120			
m,p-Xylene	21.5	0.14	0.40	ug/L	20.0		108	80-121			
o-Xylene	10.3	0.08	0.20	ug/L	10.0		103	80-121			
Xylenes, total	31.8	0.22	0.60	ug/L	30.0		106	76-127			
Styrene	10.5	0.09	0.20	ug/L	10.0		105	80-124			
Bromoform	8.96	0.15	0.20	ug/L	10.0		89.6	51-134			
1,1,2,2-Tetrachloroethane	9.68	0.10	0.20	ug/L	10.0		96.8	77-123			



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJJ0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0604-BS2)						Prepared: 22-Jun-2021	Analyzed: 22-Jun-2021 10:00				
1,2,3-Trichloropropane	9.77	0.16	0.50	ug/L	10.0		97.7	76-125			
trans-1,4-Dichloro 2-Butene	7.18	0.60	1.00	ug/L	10.0		71.8	55-129			Q
n-Propylbenzene	10.9	0.07	0.20	ug/L	10.0		109	78-130			
Bromobenzene	10.2	0.07	0.20	ug/L	10.0		102	80-120			
Isopropyl Benzene	10.8	0.07	0.20	ug/L	10.0		108	80-128			
2-Chlorotoluene	10.6	0.06	0.20	ug/L	10.0		106	78-122			
4-Chlorotoluene	10.7	0.06	0.20	ug/L	10.0		107	80-121			
t-Butylbenzene	11.3	0.07	0.20	ug/L	10.0		113	78-125			
1,3,5-Trimethylbenzene	11.1	0.07	0.20	ug/L	10.0		111	80-129			
1,2,4-Trimethylbenzene	10.9	0.10	0.20	ug/L	10.0		109	80-127			
s-Butylbenzene	11.9	0.06	0.20	ug/L	10.0		119	78-129			
4-Isopropyl Toluene	11.9	0.08	0.20	ug/L	10.0		119	79-130			
1,3-Dichlorobenzene	10.8	0.08	0.20	ug/L	10.0		108	80-120			
1,4-Dichlorobenzene	10.5	0.10	0.20	ug/L	10.0		105	80-120			
n-Butylbenzene	12.3	0.18	0.20	ug/L	10.0		123	74-129			Q
1,2-Dichlorobenzene	10.5	0.08	0.20	ug/L	10.0		105	80-120			
1,2-Dibromo-3-chloropropane	8.41	0.39	0.50	ug/L	10.0		84.1	62-123			
1,2,4-Trichlorobenzene	11.3	0.21	0.50	ug/L	10.0		113	64-124			
Hexachloro-1,3-Butadiene	13.8	0.41	0.50	ug/L	10.0		138	58-123			*, Q
Naphthalene	8.32	0.27	0.50	ug/L	10.0		83.2	50-134			
1,2,3-Trichlorobenzene	10.5	0.25	0.50	ug/L	10.0		105	49-133			
Dichlorodifluoromethane	10.4	0.13	0.20	ug/L	10.0		104	48-147			
Methyl tert-butyl Ether	10.2	0.14	0.50	ug/L	10.0		102	71-132			
2-Pentanone	42.5	2.34	5.00	ug/L	50.0		85.0	69-134			
Surrogate: 1,2-Dichloroethane-d4	4.87			ug/L	5.00		97.4	80-129			
Surrogate: Toluene-d8	4.91			ug/L	5.00		98.3	80-120			
Surrogate: 4-Bromofluorobenzene	4.81			ug/L	5.00		96.2	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.01			ug/L	5.00		100	80-120			
LCS Dup (BJJ0604-BSD1)						Prepared: 22-Jun-2021	Analyzed: 22-Jun-2021 10:21				
Gasoline Range Organics (Tol-Nap)	1130		100	ug/L	1000		113	72-128	5.24	30	
Surrogate: Toluene-d8	4.94			ug/L	5.00		98.8	80-120			
Surrogate: 4-Bromofluorobenzene	4.64			ug/L	5.00		92.8	80-120			
LCS Dup (BJJ0604-BSD2)						Prepared: 22-Jun-2021	Analyzed: 22-Jun-2021 10:42				



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJF0604-BSD2)						Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 10:42					
Chloromethane	7.95	0.27	0.50	ug/L	10.0		79.5	60-138	6.07	30	Q
Vinyl Chloride	11.5	0.08	0.20	ug/L	10.0		115	66-133	1.12	30	
Bromomethane	11.2	0.74	1.00	ug/L	10.0		112	72-131	0.33	30	
Chloroethane	10.7	0.18	0.20	ug/L	10.0		107	60-155	0.35	30	
Trichlorofluoromethane	11.8	0.13	0.20	ug/L	10.0		118	62-141	4.40	30	Q
Acrolein	41.1	2.70	5.00	ug/L	50.0		82.2	52-190	8.26	30	Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	15.8	0.11	0.20	ug/L	10.0		158	76-129	1.37	30	*, Q
Acetone	35.8	4.33	5.00	ug/L	50.0		71.7	58-142	5.96	30	Q
1,1-Dichloroethene	11.9	0.08	0.20	ug/L	10.0		119	69-135	0.75	30	
Iodomethane	11.9	0.43	1.00	ug/L	10.0		119	56-147	2.99	30	
Methylene Chloride	10.5	0.53	1.00	ug/L	10.0		105	65-135	3.81	30	
Acrylonitrile	7.86	0.40	1.00	ug/L	10.0		78.6	64-134	10.40	30	Q
Carbon Disulfide	12.4	0.12	0.20	ug/L	10.0		124	78-125	4.24	30	
trans-1,2-Dichloroethene	11.0	0.07	0.20	ug/L	10.0		110	78-128	1.90	30	
Vinyl Acetate	7.97	0.12	0.20	ug/L	10.0		79.7	55-138	7.59	30	Q
1,1-Dichloroethane	10.6	0.09	0.20	ug/L	10.0		106	76-124	3.66	30	
2-Butanone	36.0	1.77	5.00	ug/L	50.0		72.0	61-140	10.80	30	Q
2,2-Dichloropropane	12.4	0.11	0.20	ug/L	10.0		124	66-147	0.18	30	Q
cis-1,2-Dichloroethene	10.5	0.08	0.20	ug/L	10.0		105	80-121	5.40	30	
Chloroform	11.1	0.05	0.20	ug/L	10.0		111	80-122	3.87	30	
Bromochloromethane	11.5	0.09	0.20	ug/L	10.0		115	80-121	6.59	30	
1,1,1-Trichloroethane	12.1	0.08	0.20	ug/L	10.0		121	79-123	2.90	30	
1,1-Dichloropropene	11.7	0.09	0.20	ug/L	10.0		117	80-127	1.58	30	
Carbon tetrachloride	12.6	0.09	0.20	ug/L	10.0		126	53-137	1.33	30	Q
1,2-Dichloroethane	10.1	0.08	0.20	ug/L	10.0		101	75-123	5.32	30	
Benzene	10.8	0.05	0.20	ug/L	10.0		108	80-120	1.58	30	
Trichloroethene	11.7	0.07	0.20	ug/L	10.0		117	80-120	2.23	30	
1,2-Dichloropropane	10.2	0.07	0.20	ug/L	10.0		102	80-120	3.46	30	
Bromodichloromethane	10.9	0.09	0.20	ug/L	10.0		109	80-121	2.26	30	
Dibromomethane	11.0	0.06	0.20	ug/L	10.0		110	80-120	4.76	30	
2-Chloroethyl vinyl ether	9.59	0.55	1.00	ug/L	10.0		95.9	64-120	7.70	30	
4-Methyl-2-Pentanone	47.5	1.90	5.00	ug/L	50.0		95.0	67-133	8.31	30	
cis-1,3-Dichloropropene	11.2	0.09	0.20	ug/L	10.0		112	80-124	4.62	30	
Toluene	10.9	0.05	0.20	ug/L	10.0		109	80-120	3.17	30	
trans-1,3-Dichloropropene	11.5	0.09	0.20	ug/L	10.0		115	71-127	3.25	30	



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJF0604-BSD2)					Prepared: 22-Jun-2021		Analyzed: 22-Jun-2021 10:42				
2-Hexanone	39.0	2.06	5.00	ug/L	50.0		78.1	69-133	11.30	30	Q
1,1,2-Trichloroethane	10.6	0.10	0.20	ug/L	10.0		106	80-121	4.59	30	
1,3-Dichloropropane	10.4	0.07	0.20	ug/L	10.0		104	80-120	7.91	30	
Tetrachloroethene	12.4	0.09	0.20	ug/L	10.0		124	80-120	3.26	30	*
Dibromochloromethane	11.3	0.09	0.20	ug/L	10.0		113	65-135	5.71	30	
1,2-Dibromoethane	10.9	0.09	0.20	ug/L	10.0		109	80-121	5.91	30	
Chlorobenzene	11.3	0.06	0.20	ug/L	10.0		113	80-120	4.89	30	
Ethylbenzene	11.0	0.05	0.20	ug/L	10.0		110	80-120	3.80	30	
1,1,1,2-Tetrachloroethane	11.3	0.09	0.20	ug/L	10.0		113	80-120	5.80	30	
m,p-Xylene	22.7	0.14	0.40	ug/L	20.0		114	80-121	5.32	30	
o-Xylene	10.9	0.08	0.20	ug/L	10.0		109	80-121	5.83	30	
Xylenes, total	33.6	0.22	0.60	ug/L	30.0		112	76-127	5.49	30	
Styrene	11.0	0.09	0.20	ug/L	10.0		110	80-124	4.33	30	
Bromoform	9.64	0.15	0.20	ug/L	10.0		96.4	51-134	7.27	30	
1,1,2,2-Tetrachloroethane	10.3	0.10	0.20	ug/L	10.0		103	77-123	6.40	30	
1,2,3-Trichloropropane	10.8	0.16	0.50	ug/L	10.0		108	76-125	10.00	30	
trans-1,4-Dichloro 2-Butene	7.96	0.60	1.00	ug/L	10.0		79.6	55-129	10.40	30	Q
n-Propylbenzene	11.3	0.07	0.20	ug/L	10.0		113	78-130	3.08	30	
Bromobenzene	10.6	0.07	0.20	ug/L	10.0		106	80-120	3.18	30	
Isopropyl Benzene	11.3	0.07	0.20	ug/L	10.0		113	80-128	4.87	30	
2-Chlorotoluene	11.0	0.06	0.20	ug/L	10.0		110	78-122	3.90	30	
4-Chlorotoluene	11.4	0.06	0.20	ug/L	10.0		114	80-121	6.41	30	
t-Butylbenzene	11.8	0.07	0.20	ug/L	10.0		118	78-125	4.89	30	
1,3,5-Trimethylbenzene	11.5	0.07	0.20	ug/L	10.0		115	80-129	3.97	30	
1,2,4-Trimethylbenzene	11.5	0.10	0.20	ug/L	10.0		115	80-127	5.41	30	
s-Butylbenzene	12.4	0.06	0.20	ug/L	10.0		124	78-129	4.16	30	
4-Isopropyl Toluene	12.3	0.08	0.20	ug/L	10.0		123	79-130	2.82	30	
1,3-Dichlorobenzene	11.3	0.08	0.20	ug/L	10.0		113	80-120	4.23	30	
1,4-Dichlorobenzene	11.0	0.10	0.20	ug/L	10.0		110	80-120	4.51	30	
n-Butylbenzene	12.4	0.18	0.20	ug/L	10.0		124	74-129	0.80	30	Q
1,2-Dichlorobenzene	10.9	0.08	0.20	ug/L	10.0		109	80-120	4.24	30	
1,2-Dibromo-3-chloropropane	8.90	0.39	0.50	ug/L	10.0		89.0	62-123	5.65	30	
1,2,4-Trichlorobenzene	12.1	0.21	0.50	ug/L	10.0		121	64-124	6.75	30	
Hexachloro-1,3-Butadiene	13.8	0.41	0.50	ug/L	10.0		138	58-123	0.15	30	*, Q
Naphthalene	9.52	0.27	0.50	ug/L	10.0		95.2	50-134	13.50	30	



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
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Volatile Organic Compounds - Quality Control

Batch BJJ0604 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0604-BSD2)					Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 10:42						
1,2,3-Trichlorobenzene	11.3	0.25	0.50	ug/L	10.0		113	49-133	6.85	30	
Dichlorodifluoromethane	11.3	0.13	0.20	ug/L	10.0		113	48-147	8.37	30	
Methyl tert-butyl Ether	9.63	0.14	0.50	ug/L	10.0		96.3	71-132	6.10	30	
2-Pentanone	45.0	2.34	5.00	ug/L	50.0		90.1	69-134	5.85	30	
Surrogate: 1,2-Dichloroethane-d4	4.89			ug/L	5.00		97.7	80-129			
Surrogate: Toluene-d8	4.83			ug/L	5.00		96.6	80-120			
Surrogate: 4-Bromofluorobenzene	4.72			ug/L	5.00		94.4	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.12			ug/L	5.00		102	80-120			



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0605 - EPA 5035 (Methanol Extraction)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0605-BLK1)										
					Prepared: 22-Jun-2021		Analyzed: 23-Jun-2021 13:22			
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.87		ug/kg	5.00		97.3	80-120			
Surrogate: 4-Bromofluorobenzene	4.72		ug/kg	5.00		94.4	78-123			
LCS (BJF0605-BS1)										
					Prepared: 22-Jun-2021		Analyzed: 23-Jun-2021 11:38			
Gasoline Range Organics (Tol-Nap)	54100	5000	ug/kg	50000		108	70-121			
Surrogate: Toluene-d8	5.11		ug/kg	5.00		102	80-120			
Surrogate: 4-Bromofluorobenzene	5.06		ug/kg	5.00		101	78-123			
LCS Dup (BJF0605-BSD1)										
					Prepared: 22-Jun-2021		Analyzed: 23-Jun-2021 12:19			
Gasoline Range Organics (Tol-Nap)	48200	5000	ug/kg	50000		96.3	70-121	11.60	30	
Surrogate: Toluene-d8	4.97		ug/kg	5.00		99.4	80-120			
Surrogate: 4-Bromofluorobenzene	5.12		ug/kg	5.00		102	78-123			



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0636-BLK1)						Prepared: 23-Jun-2021 Analyzed: 23-Jun-2021 10:58					
Chloromethane	ND	0.38	1.00	ug/kg							U
Vinyl Chloride	ND	0.34	1.00	ug/kg							U
Bromomethane	ND	0.39	1.00	ug/kg							U
Chloroethane	ND	1.24	2.00	ug/kg							U
Trichlorofluoromethane	ND	0.98	2.00	ug/kg							U
Acrolein	ND	1.75	5.00	ug/kg							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.85	2.00	ug/kg							U
Acetone	ND	6.35	10.0	ug/kg							U
1,1-Dichloroethene	ND	0.37	1.00	ug/kg							U
Iodomethane	ND	0.91	1.00	ug/kg							U
Methylene Chloride	ND	4.36	5.00	ug/kg							U
Acrylonitrile	ND	1.98	5.00	ug/kg							U
Carbon Disulfide	ND	0.33	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.53	1.00	ug/kg							U
Vinyl Acetate	ND	3.25	5.00	ug/kg							U
1,1-Dichloroethane	ND	0.28	1.00	ug/kg							U
2-Butanone	ND	2.44	5.00	ug/kg							U
2,2-Dichloropropane	ND	0.31	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.26	1.00	ug/kg							U
Chloroform	ND	0.29	1.00	ug/kg							U
Bromochloromethane	ND	0.40	1.00	ug/kg							U
1,1,1-Trichloroethane	ND	0.60	1.00	ug/kg							U
1,1-Dichloropropene	ND	0.28	1.00	ug/kg							U
Carbon tetrachloride	ND	0.31	1.00	ug/kg							U
1,2-Dichloroethane	ND	0.23	1.00	ug/kg							U
Benzene	ND	0.17	1.00	ug/kg							U
Trichloroethene	ND	0.26	1.00	ug/kg							U
1,2-Dichloropropane	ND	0.33	1.00	ug/kg							U
Bromodichloromethane	ND	0.26	1.00	ug/kg							U
Dibromomethane	ND	0.36	1.00	ug/kg							U
2-Chloroethyl vinyl ether	ND	3.02	5.00	ug/kg							U
4-Methyl-2-Pentanone	ND	1.37	5.00	ug/kg							U
cis-1,3-Dichloropropene	ND	0.26	1.00	ug/kg							U
Toluene	ND	0.25	1.00	ug/kg							U
trans-1,3-Dichloropropene	ND	0.41	1.00	ug/kg							U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
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Volatile Organic Compounds - Quality Control

Batch BJJ0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0636-BLK1)						Prepared: 23-Jun-2021 Analyzed: 23-Jun-2021 10:58					
2-Hexanone	ND	1.27	5.00	ug/kg							U
1,1,2-Trichloroethane	ND	0.27	1.00	ug/kg							U
1,3-Dichloropropane	ND	0.23	1.00	ug/kg							U
Tetrachloroethene	ND	0.20	1.00	ug/kg							U
Dibromochloromethane	ND	0.27	1.00	ug/kg							U
1,2-Dibromoethane	ND	0.31	1.00	ug/kg							U
Chlorobenzene	ND	0.21	1.00	ug/kg							U
Ethylbenzene	ND	0.23	1.00	ug/kg							U
1,1,1,2-Tetrachloroethane	ND	0.35	1.00	ug/kg							U
m,p-Xylene	ND	0.49	2.00	ug/kg							U
o-Xylene	ND	0.24	1.00	ug/kg							U
Xylenes, total	ND	0.70	2.00	ug/kg							U
Styrene	ND	0.25	1.00	ug/kg							U
Bromoform	ND	0.46	1.00	ug/kg							U
1,1,2,2-Tetrachloroethane	ND	0.27	1.00	ug/kg							U
1,2,3-Trichloropropane	ND	1.50	2.00	ug/kg							U
trans-1,4-Dichloro 2-Butene	ND	2.75	5.00	ug/kg							U
n-Propylbenzene	ND	0.24	1.00	ug/kg							U
Bromobenzene	ND	0.25	1.00	ug/kg							U
Isopropyl Benzene	ND	0.26	1.00	ug/kg							U
2-Chlorotoluene	ND	0.22	1.00	ug/kg							U
4-Chlorotoluene	ND	0.29	1.00	ug/kg							U
t-Butylbenzene	ND	0.25	1.00	ug/kg							U
1,3,5-Trimethylbenzene	ND	0.25	1.00	ug/kg							U
1,2,4-Trimethylbenzene	ND	0.27	1.00	ug/kg							U
s-Butylbenzene	ND	0.24	1.00	ug/kg							U
4-Isopropyl Toluene	ND	0.29	1.00	ug/kg							U
1,3-Dichlorobenzene	ND	0.24	1.00	ug/kg							U
1,4-Dichlorobenzene	ND	0.43	1.00	ug/kg							U
n-Butylbenzene	ND	0.28	1.00	ug/kg							U
1,2-Dichlorobenzene	ND	0.65	1.00	ug/kg							U
1,2-Dibromo-3-chloropropane	ND	2.36	5.00	ug/kg							U
1,2,4-Trichlorobenzene	ND	1.82	5.00	ug/kg							U
Hexachloro-1,3-Butadiene	ND	1.80	5.00	ug/kg							U
Naphthalene	ND	2.46	5.00	ug/kg							U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0636-BLK1)											
						Prepared: 23-Jun-2021 Analyzed: 23-Jun-2021 10:58					
1,2,3-Trichlorobenzene	ND	2.32	5.00	ug/kg							U
Dichlorodifluoromethane	ND	0.40	1.00	ug/kg							U
Methyl tert-butyl Ether	ND	0.25	1.00	ug/kg							U
2-Pentanone	ND	2.15	5.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	46.2			ug/kg	50.0		92.4	80-149			
Surrogate: Toluene-d8	47.9			ug/kg	50.0		95.8	77-120			
Surrogate: 4-Bromofluorobenzene	50.1			ug/kg	50.0		100	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	50.4			ug/kg	50.0		101	80-120			
LCS (BJF0636-BS1)											
						Prepared: 23-Jun-2021 Analyzed: 23-Jun-2021 09:33					
Chloromethane	44.0			ug/kg	50.0		87.9	64-132			
Vinyl Chloride	48.5			ug/kg	50.0		96.9	74-135			
Bromomethane	43.8			ug/kg	50.0		87.5	53-144			
Chloroethane	47.1			ug/kg	50.0		94.2	55-149			
Trichlorofluoromethane	47.8			ug/kg	50.0		95.7	61-164			
Acrolein	240			ug/kg	250		95.9	59-140			
1,1,2-Trichloro-1,2,2-Trifluoroethane	51.2			ug/kg	50.0		102	74-143			
Acetone	233			ug/kg	250		93.2	48-137			
1,1-Dichloroethene	47.7			ug/kg	50.0		95.5	77-134			
Iodomethane	45.0			ug/kg	50.0		90.0	31-162			
Methylene Chloride	44.2			ug/kg	50.0		88.4	69-129			
Acrylonitrile	44.9			ug/kg	50.0		89.7	69-134			
Carbon Disulfide	48.2			ug/kg	50.0		96.4	71-137			
trans-1,2-Dichloroethene	48.0			ug/kg	50.0		96.0	79-130			
Vinyl Acetate	46.6			ug/kg	50.0		93.1	66-141			
1,1-Dichloroethane	46.8			ug/kg	50.0		93.6	80-126			
2-Butanone	221			ug/kg	250		88.4	70-132			
2,2-Dichloropropane	52.8			ug/kg	50.0		106	77-138			
cis-1,2-Dichloroethene	48.3			ug/kg	50.0		96.5	80-125			
Chloroform	47.2			ug/kg	50.0		94.4	80-126			
Bromochloromethane	47.2			ug/kg	50.0		94.5	80-129			
1,1,1-Trichloroethane	49.3			ug/kg	50.0		98.6	78-133			
1,1-Dichloropropene	52.2			ug/kg	50.0		104	63-145			
Carbon tetrachloride	54.2			ug/kg	50.0		108	71-129			
1,2-Dichloroethane	46.2			ug/kg	50.0		92.4	76-120			



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0636-BS1)					Prepared: 23-Jun-2021		Analyzed: 23-Jun-2021 09:33				
Benzene	51.5			ug/kg	50.0		103	80-120			
Trichloroethene	52.4			ug/kg	50.0		105	80-120			
1,2-Dichloropropane	50.1			ug/kg	50.0		100	79-120			
Bromodichloromethane	50.0			ug/kg	50.0		100	80-122			
Dibromomethane	47.7			ug/kg	50.0		95.4	80-120			
2-Chloroethyl vinyl ether	101			ug/kg	50.0		202	51-129			*, Q
4-Methyl-2-Pentanone	246			ug/kg	250		98.6	73-121			
cis-1,3-Dichloropropene	51.2			ug/kg	50.0		102	80-120			
Toluene	50.6			ug/kg	50.0		101	75-120			
trans-1,3-Dichloropropene	51.1			ug/kg	50.0		102	80-124			
2-Hexanone	257			ug/kg	250		103	68-122			
1,1,2-Trichloroethane	48.6			ug/kg	50.0		97.2	79-120			
1,3-Dichloropropane	49.5			ug/kg	50.0		98.9	78-120			
Tetrachloroethene	55.4			ug/kg	50.0		111	74-124			
Dibromochloromethane	50.6			ug/kg	50.0		101	74-125			
1,2-Dibromoethane	49.1			ug/kg	50.0		98.1	80-120			
Chlorobenzene	51.6			ug/kg	50.0		103	78-120			
Ethylbenzene	54.1			ug/kg	50.0		108	80-125			
1,1,1,2-Tetrachloroethane	50.8			ug/kg	50.0		102	80-120			
m,p-Xylene	109			ug/kg	100		109	76-121			
o-Xylene	53.8			ug/kg	50.0		108	67-132			
Xylenes, total	163			ug/kg	150		109	67-132			
Styrene	54.4			ug/kg	50.0		109	80-120			
Bromoform	51.7			ug/kg	50.0		103	64-128			
1,1,2,2-Tetrachloroethane	50.4			ug/kg	50.0		101	74-120			
1,2,3-Trichloropropane	50.1			ug/kg	50.0		100	73-120			
trans-1,4-Dichloro 2-Butene	53.2			ug/kg	50.0		106	65-125			
n-Propylbenzene	57.7			ug/kg	50.0		115	72-124			
Bromobenzene	52.4			ug/kg	50.0		105	76-120			
Isopropyl Benzene	56.3			ug/kg	50.0		113	74-121			
2-Chlorotoluene	55.3			ug/kg	50.0		111	75-120			
4-Chlorotoluene	57.1			ug/kg	50.0		114	69-124			
t-Butylbenzene	55.8			ug/kg	50.0		112	72-122			
1,3,5-Trimethylbenzene	56.5			ug/kg	50.0		113	74-122			
1,2,4-Trimethylbenzene	57.1			ug/kg	50.0		114	75-121			



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0636-BS1)											
Prepared: 23-Jun-2021						Analyzed: 23-Jun-2021 09:33					
s-Butylbenzene	58.0			ug/kg	50.0		116	70-128			
4-Isopropyl Toluene	59.8			ug/kg	50.0		120	75-125			
1,3-Dichlorobenzene	56.0			ug/kg	50.0		112	75-120			
1,4-Dichlorobenzene	55.7			ug/kg	50.0		111	73-120			
n-Butylbenzene	62.1			ug/kg	50.0		124	73-130			Q
1,2-Dichlorobenzene	52.9			ug/kg	50.0		106	76-120			
1,2-Dibromo-3-chloropropane	51.7			ug/kg	50.0		103	72-136			
1,2,4-Trichlorobenzene	65.0			ug/kg	50.0		130	66-140			Q
Hexachloro-1,3-Butadiene	58.5			ug/kg	50.0		117	67-133			
Naphthalene	58.2			ug/kg	50.0		116	69-125			
1,2,3-Trichlorobenzene	60.6			ug/kg	50.0		121	68-132			Q
Dichlorodifluoromethane	46.2			ug/kg	50.0		92.3	67-142			
Methyl tert-butyl Ether	44.7			ug/kg	50.0		89.5	79-127			
n-Hexane	57.0			ug/kg	50.0		114	30-160			
2-Pentanone	245			ug/kg	250		98.0	77-120			
Surrogate: 1,2-Dichloroethane-d4	46.0			ug/kg	50.0		92.1	80-149			
Surrogate: Toluene-d8	48.5			ug/kg	50.0		96.9	77-120			
Surrogate: 4-Bromofluorobenzene	49.8			ug/kg	50.0		99.7	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	50.4			ug/kg	50.0		101	80-120			
LCS Dup (BJF0636-BSD1)											
Prepared: 23-Jun-2021						Analyzed: 23-Jun-2021 10:33					
Chloromethane	44.7			ug/kg	50.0		89.4	64-132	1.67	30	
Vinyl Chloride	49.5			ug/kg	50.0		99.1	74-135	2.17	30	
Bromomethane	45.1			ug/kg	50.0		90.2	53-144	2.96	30	
Chloroethane	48.7			ug/kg	50.0		97.3	55-149	3.34	30	
Trichlorofluoromethane	48.9			ug/kg	50.0		97.8	61-164	2.23	30	
Acrolein	241			ug/kg	250		96.4	59-140	0.50	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	51.2			ug/kg	50.0		102	74-143	0.03	30	
Acetone	237			ug/kg	250		94.9	48-137	1.77	30	
1,1-Dichloroethene	48.7			ug/kg	50.0		97.4	77-134	1.98	30	
Iodomethane	47.0			ug/kg	50.0		93.9	31-162	4.22	30	
Methylene Chloride	44.8			ug/kg	50.0		89.6	69-129	1.34	30	
Acrylonitrile	44.9			ug/kg	50.0		89.7	69-134	0.01	30	
Carbon Disulfide	50.1			ug/kg	50.0		100	71-137	3.81	30	
trans-1,2-Dichloroethene	47.2			ug/kg	50.0		94.4	79-130	1.70	30	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJF0636-BSD1)					Prepared: 23-Jun-2021		Analyzed: 23-Jun-2021 10:33				
Vinyl Acetate	45.8			ug/kg	50.0		91.6	66-141	1.64	30	
1,1-Dichloroethane	46.2			ug/kg	50.0		92.4	80-126	1.21	30	
2-Butanone	223			ug/kg	250		89.1	70-132	0.74	30	
2,2-Dichloropropane	53.0			ug/kg	50.0		106	77-138	0.23	30	
cis-1,2-Dichloroethene	46.2			ug/kg	50.0		92.5	80-125	4.29	30	
Chloroform	45.9			ug/kg	50.0		91.8	80-126	2.80	30	
Bromochloromethane	46.0			ug/kg	50.0		92.1	80-129	2.60	30	
1,1,1-Trichloroethane	48.6			ug/kg	50.0		97.1	78-133	1.49	30	
1,1-Dichloropropene	52.1			ug/kg	50.0		104	63-145	0.22	30	
Carbon tetrachloride	53.2			ug/kg	50.0		106	71-129	1.78	30	
1,2-Dichloroethane	44.6			ug/kg	50.0		89.2	76-120	3.45	30	
Benzene	50.4			ug/kg	50.0		101	80-120	2.15	30	
Trichloroethene	51.6			ug/kg	50.0		103	80-120	1.49	30	
1,2-Dichloropropane	48.1			ug/kg	50.0		96.3	79-120	3.95	30	
Bromodichloromethane	48.2			ug/kg	50.0		96.5	80-122	3.57	30	
Dibromomethane	46.4			ug/kg	50.0		92.8	80-120	2.68	30	
2-Chloroethyl vinyl ether	98.9			ug/kg	50.0		198	51-129	2.32	30	*, Q
4-Methyl-2-Pentanone	248			ug/kg	250		99.2	73-121	0.64	30	
cis-1,3-Dichloropropene	49.5			ug/kg	50.0		99.1	80-120	3.32	30	
Toluene	49.9			ug/kg	50.0		99.8	75-120	1.33	30	
trans-1,3-Dichloropropene	48.7			ug/kg	50.0		97.4	80-124	4.74	30	
2-Hexanone	259			ug/kg	250		104	68-122	0.78	30	
1,1,2-Trichloroethane	46.0			ug/kg	50.0		92.0	79-120	5.42	30	
1,3-Dichloropropane	47.3			ug/kg	50.0		94.6	78-120	4.49	30	
Tetrachloroethene	54.5			ug/kg	50.0		109	74-124	1.73	30	
Dibromochloromethane	48.8			ug/kg	50.0		97.5	74-125	3.63	30	
1,2-Dibromoethane	47.0			ug/kg	50.0		94.0	80-120	4.26	30	
Chlorobenzene	50.2			ug/kg	50.0		100	78-120	2.76	30	
Ethylbenzene	53.1			ug/kg	50.0		106	80-125	1.88	30	
1,1,1,2-Tetrachloroethane	49.1			ug/kg	50.0		98.2	80-120	3.39	30	
m,p-Xylene	106			ug/kg	100		106	76-121	2.73	30	
o-Xylene	52.2			ug/kg	50.0		104	67-132	3.01	30	
Xylenes, total	159			ug/kg	150		106	67-132	2.82	30	
Styrene	53.2			ug/kg	50.0		106	80-120	2.31	30	
Bromoform	49.8			ug/kg	50.0		99.6	64-128	3.75	30	



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Volatile Organic Compounds - Quality Control

Batch BJF0636 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJF0636-BSD1)					Prepared: 23-Jun-2021 Analyzed: 23-Jun-2021 10:33						
1,1,2,2-Tetrachloroethane	48.6			ug/kg	50.0		97.3	74-120	3.61	30	
1,2,3-Trichloropropane	48.1			ug/kg	50.0		96.3	73-120	3.91	30	
trans-1,4-Dichloro 2-Butene	55.7			ug/kg	50.0		111	65-125	4.48	30	
n-Propylbenzene	55.9			ug/kg	50.0		112	72-124	3.20	30	
Bromobenzene	49.8			ug/kg	50.0		99.7	76-120	5.03	30	
Isopropyl Benzene	54.8			ug/kg	50.0		110	74-121	2.72	30	
2-Chlorotoluene	52.9			ug/kg	50.0		106	75-120	4.43	30	
4-Chlorotoluene	55.0			ug/kg	50.0		110	69-124	3.68	30	
t-Butylbenzene	54.2			ug/kg	50.0		108	72-122	2.91	30	
1,3,5-Trimethylbenzene	54.4			ug/kg	50.0		109	74-122	3.78	30	
1,2,4-Trimethylbenzene	54.9			ug/kg	50.0		110	75-121	3.97	30	
s-Butylbenzene	56.1			ug/kg	50.0		112	70-128	3.34	30	
4-Isopropyl Toluene	57.3			ug/kg	50.0		115	75-125	4.28	30	
1,3-Dichlorobenzene	53.9			ug/kg	50.0		108	75-120	3.87	30	
1,4-Dichlorobenzene	52.8			ug/kg	50.0		106	73-120	5.30	30	
n-Butylbenzene	59.9			ug/kg	50.0		120	73-130	3.60	30	Q
1,2-Dichlorobenzene	50.1			ug/kg	50.0		100	76-120	5.31	30	
1,2-Dibromo-3-chloropropane	52.1			ug/kg	50.0		104	72-136	0.82	30	
1,2,4-Trichlorobenzene	61.4			ug/kg	50.0		123	66-140	5.61	30	Q
Hexachloro-1,3-Butadiene	58.2			ug/kg	50.0		116	67-133	0.53	30	
Naphthalene	54.9			ug/kg	50.0		110	69-125	5.74	30	
1,2,3-Trichlorobenzene	57.1			ug/kg	50.0		114	68-132	5.90	30	Q
Dichlorodifluoromethane	47.3			ug/kg	50.0		94.6	67-142	2.46	30	
Methyl tert-butyl Ether	43.4			ug/kg	50.0		86.9	79-127	2.95	30	
n-Hexane	55.0			ug/kg	50.0		110	30-160	3.55	30	
2-Pentanone	247			ug/kg	250		98.7	77-120	0.71	30	
Surrogate: 1,2-Dichloroethane-d4	46.5			ug/kg	50.0		93.0	80-149			
Surrogate: Toluene-d8	48.4			ug/kg	50.0		96.7	77-120			
Surrogate: 4-Bromofluorobenzene	49.8			ug/kg	50.0		99.7	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	50.5			ug/kg	50.0		101	80-120			



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0589 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0589-BLK1)						Prepared: 22-Jun-2021 Analyzed: 23-Jun-2021 11:50					
Phenol	ND	0.2	1.0	ug/L							U
bis(2-chloroethyl) ether	ND	0.4	1.0	ug/L							U
2-Chlorophenol	ND	0.4	1.0	ug/L							U
1,3-Dichlorobenzene	ND	0.3	1.0	ug/L							U
1,4-Dichlorobenzene	ND	0.3	1.0	ug/L							U
Benzyl Alcohol	ND	1.0	2.0	ug/L							U
1,2-Dichlorobenzene	ND	0.3	1.0	ug/L							U
2-Methylphenol	ND	0.3	1.0	ug/L							U
2,2'-Oxybis(1-chloropropane)	ND	0.5	1.0	ug/L							U
4-Methylphenol	ND	0.4	2.0	ug/L							U
N-Nitroso-di-n-Propylamine	ND	0.2	1.0	ug/L							U
Hexachloroethane	ND	0.3	2.0	ug/L							U
Nitrobenzene	ND	0.4	1.0	ug/L							U
Isophorone	ND	0.5	1.0	ug/L							U
2-Nitrophenol	ND	0.5	3.0	ug/L							U
2,4-Dimethylphenol	ND	1.0	3.0	ug/L							U
Bis(2-Chloroethoxy)methane	ND	0.6	1.0	ug/L							U
Benzoic acid	ND	3.4	20.0	ug/L							U
2,4-Dichlorophenol	ND	1.9	3.0	ug/L							U
1,2,4-Trichlorobenzene	ND	0.3	1.0	ug/L							U
Naphthalene	ND	0.2	1.0	ug/L							U
4-Chloroaniline	ND	1.9	5.0	ug/L							U
Hexachlorobutadiene	0.4	0.1	3.0	ug/L							J
4-Chloro-3-Methylphenol	ND	2.0	3.0	ug/L							U
2-Methylnaphthalene	ND	0.2	1.0	ug/L							U
Hexachlorocyclopentadiene	ND	2.5	5.0	ug/L							U
2,4,6-Trichlorophenol	ND	1.9	3.0	ug/L							U
2,4,5-Trichlorophenol	ND	1.8	5.0	ug/L							U
2-Chloronaphthalene	ND	0.5	1.0	ug/L							U
2-Nitroaniline	ND	2.0	3.0	ug/L							U
Dimethylphthalate	ND	0.4	1.0	ug/L							U
Acenaphthylene	ND	0.3	1.0	ug/L							U
2,6-Dinitrotoluene	ND	2.1	3.0	ug/L							U
3-Nitroaniline	ND	2.2	3.0	ug/L							U
Acenaphthene	ND	0.3	1.0	ug/L							U



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0589 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0589-BLK1)						Prepared: 22-Jun-2021 Analyzed: 23-Jun-2021 11:50					
2,4-Dinitrophenol	ND	4.9	20.0	ug/L							U
Dibenzofuran	ND	0.3	1.0	ug/L							U
4-Nitrophenol	ND	1.0	10.0	ug/L							U
2,4-Dinitrotoluene	ND	2.0	3.0	ug/L							U
Fluorene	ND	0.3	1.0	ug/L							U
Diethyl phthalate	ND	0.4	1.0	ug/L							U
4-Chlorophenylphenyl ether	ND	0.4	1.0	ug/L							U
4-Nitroaniline	ND	1.9	3.0	ug/L							U
4,6-Dinitro-2-methylphenol	ND	5.0	10.0	ug/L							U
N-Nitrosodiphenylamine	ND	0.4	1.0	ug/L							U
4-Bromophenyl phenyl ether	ND	0.3	1.0	ug/L							U
Hexachlorobenzene	ND	0.4	1.0	ug/L							U
Pentachlorophenol	ND	2.6	10.0	ug/L							U
Phenanthrene	ND	0.2	1.0	ug/L							U
Anthracene	ND	0.4	1.0	ug/L							U
Carbazole	ND	0.6	1.0	ug/L							U
Di-n-Butylphthalate	ND	0.5	1.0	ug/L							U
Fluoranthene	ND	0.4	1.0	ug/L							U
Pyrene	ND	0.3	1.0	ug/L							U
Butylbenzylphthalate	ND	0.4	1.0	ug/L							U
Benzo(a)anthracene	ND	0.4	1.0	ug/L							U
3,3'-Dichlorobenzidine	ND	1.6	5.0	ug/L							U
Chrysene	ND	0.4	1.0	ug/L							U
bis(2-Ethylhexyl)phthalate	ND	0.5	3.0	ug/L							U
Di-n-Octylphthalate	ND	0.4	1.0	ug/L							U
Benzo(a)pyrene	ND	0.5	1.0	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	0.4	1.0	ug/L							U
Dibenzo(a,h)anthracene	ND	0.4	1.0	ug/L							U
Benzo(g,h,i)perylene	ND	0.5	1.0	ug/L							U
Benzo(a)fluoranthene, Total	ND	0.8	2.0	ug/L							U
1-Methylnaphthalene	ND	0.3	1.0	ug/L							U
Surrogate: 2-Fluorophenol	28.7			ug/L	37.5		76.5	33-120			
Surrogate: Phenol-d5	29.7			ug/L	37.5		79.1	38-120			
Surrogate: 2-Chlorophenol-d4	31.2			ug/L	37.5		83.1	41-120			
Surrogate: 1,2-Dichlorobenzene-d4	18.9			ug/L	25.0		75.6	20-120			



The Boeing Company
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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0589 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0589-BLK1)						Prepared: 22-Jun-2021	Analyzed: 23-Jun-2021 11:50				
Surrogate: Nitrobenzene-d5	19.8			ug/L	25.0		79.4	27-120			
Surrogate: 2-Fluorobiphenyl	20.6			ug/L	25.0		82.3	33-120			
Surrogate: 2,4,6-Tribromophenol	35.2			ug/L	37.5		94.0	52-120			
Surrogate: p-Terphenyl-d14	24.0			ug/L	25.0		96.1	28-120			
LCS (BJF0589-BS1)						Prepared: 22-Jun-2021	Analyzed: 23-Jun-2021 12:24				
Phenol	19.2	0.2	1.0	ug/L	25.0		76.9	35-120			
bis(2-chloroethyl) ether	18.2	0.4	1.0	ug/L	25.0		72.8	46.5-120			
2-Chlorophenol	18.7	0.4	1.0	ug/L	25.0		74.8	48-120			
1,3-Dichlorobenzene	15.9	0.3	1.0	ug/L	25.0		63.5	34.2-120			
1,4-Dichlorobenzene	16.8	0.3	1.0	ug/L	25.0		67.4	36-120			
Benzyl Alcohol	21.0	1.0	2.0	ug/L	25.0		83.9	27.4-120			
1,2-Dichlorobenzene	17.2	0.3	1.0	ug/L	25.0		68.7	38.4-120			
2-Methylphenol	18.4	0.3	1.0	ug/L	25.0		73.8	47.8-120			
2,2'-Oxybis(1-chloropropane)	19.5	0.5	1.0	ug/L	25.0		77.9	40.4-120			
4-Methylphenol	19.5	0.4	2.0	ug/L	25.0		78.1	52.3-120			
N-Nitroso-di-n-Propylamine	19.1	0.2	1.0	ug/L	25.0		76.5	51.4-120			
Hexachloroethane	14.2	0.3	2.0	ug/L	25.0		57.0	29.5-120			
Nitrobenzene	19.6	0.4	1.0	ug/L	25.0		78.2	51.5-120			
Isophorone	27.9	0.5	1.0	ug/L	25.0		111	62.3-128			
2-Nitrophenol	23.1	0.5	3.0	ug/L	25.0		92.4	58.6-124			
2,4-Dimethylphenol	40.6	1.0	3.0	ug/L	65.0		62.5	38.5-120			
Bis(2-Chloroethoxy)methane	21.5	0.6	1.0	ug/L	25.0		85.9	52.9-120			
Benzoic acid	90.3	3.4	20.0	ug/L	115		78.5	38.2-120			
2,4-Dichlorophenol	49.3	1.9	3.0	ug/L	65.0		75.9	43.6-120			
1,2,4-Trichlorobenzene	18.2	0.3	1.0	ug/L	25.0		72.7	38.6-120			
Naphthalene	20.4	0.2	1.0	ug/L	25.0		81.6	40.5-120			
4-Chloroaniline	44.8	1.9	5.0	ug/L	65.0		69.0	42.7-120			
Hexachlorobutadiene	15.8	0.1	3.0	ug/L	25.0		63.1	32.3-120			
4-Chloro-3-Methylphenol	49.9	2.0	3.0	ug/L	65.0		76.8	51.9-120			
2-Methylnaphthalene	20.2	0.2	1.0	ug/L	25.0		80.9	47.3-120			
Hexachlorocyclopentadiene	24.9	2.5	5.0	ug/L	65.0		38.2	23.3-120			
2,4,6-Trichlorophenol	53.3	1.9	3.0	ug/L	65.0		82.0	47-120			
2,4,5-Trichlorophenol	53.1	1.8	5.0	ug/L	65.0		81.7	48.4-120			
2-Chloronaphthalene	20.3	0.5	1.0	ug/L	25.0		81.0	47.7-123			



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0589 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0589-BS1)						Prepared: 22-Jun-2021 Analyzed: 23-Jun-2021 12:24					
2-Nitroaniline	51.5	2.0	3.0	ug/L	65.0		79.2	56.8-120			
Dimethylphthalate	22.9	0.4	1.0	ug/L	25.0		91.7	65.2-125			
Acenaphthylene	21.2	0.3	1.0	ug/L	25.0		84.6	44.1-120			
2,6-Dinitrotoluene	63.9	2.1	3.0	ug/L	65.0		98.2	69.3-140			
3-Nitroaniline	56.2	2.2	3.0	ug/L	65.0		86.5	60.9-120			
Acenaphthene	21.7	0.3	1.0	ug/L	25.0		87.0	50.4-120			
2,4-Dinitrophenol	134	4.9	20.0	ug/L	115		117	33.7-183			Q
Dibenzofuran	22.6	0.3	1.0	ug/L	25.0		90.6	49.9-120			
4-Nitrophenol	50.7	1.0	10.0	ug/L	65.0		78.1	50.2-136			
2,4-Dinitrotoluene	59.0	2.0	3.0	ug/L	65.0		90.8	66.8-132			
Fluorene	23.3	0.3	1.0	ug/L	25.0		93.3	57.8-120			
Diethyl phthalate	23.1	0.4	1.0	ug/L	25.0		92.5	68.1-120			
4-Chlorophenylphenyl ether	23.1	0.4	1.0	ug/L	25.0		92.6	59.1-127			
4-Nitroaniline	58.3	1.9	3.0	ug/L	65.0		89.8	56-122			
4,6-Dinitro-2-methylphenol	104	5.0	10.0	ug/L	115		90.7	37.9-162			
N-Nitrosodiphenylamine	21.1	0.4	1.0	ug/L	25.0		84.5	59.6-120			
4-Bromophenyl phenyl ether	22.4	0.3	1.0	ug/L	25.0		89.6	59.6-120			
Hexachlorobenzene	22.1	0.4	1.0	ug/L	25.0		88.6	53.7-120			
Pentachlorophenol	50.4	2.6	10.0	ug/L	65.0		77.6	40.3-128			
Phenanthrene	22.1	0.2	1.0	ug/L	25.0		88.6	58.8-120			
Anthracene	22.3	0.4	1.0	ug/L	25.0		89.1	60.5-120			
Carbazole	20.6	0.6	1.0	ug/L	25.0		82.3	59.7-120			
Di-n-Butylphthalate	22.5	0.5	1.0	ug/L	25.0		89.8	71-120			
Fluoranthene	23.3	0.4	1.0	ug/L	25.0		93.4	66.7-120			
Pyrene	29.1	0.3	1.0	ug/L	25.0		116	62.7-127			Q
Butylbenzylphthalate	24.7	0.4	1.0	ug/L	25.0		99.0	67.4-128			
Benzo(a)anthracene	23.5	0.4	1.0	ug/L	25.0		94.0	58.3-128			
3,3'-Dichlorobenzidine	56.5	1.6	5.0	ug/L	40.0		141	34.1-120			*
Chrysene	25.3	0.4	1.0	ug/L	25.0		101	58.9-120			
bis(2-Ethylhexyl)phthalate	24.3	0.5	3.0	ug/L	25.0		97.3	68.3-123			
Di-n-Octylphthalate	26.4	0.4	1.0	ug/L	25.0		106	61.5-120			
Benzo(a)pyrene	22.5	0.5	1.0	ug/L	25.0		90.1	70.6-120			
Indeno(1,2,3-cd)pyrene	19.0	0.4	1.0	ug/L	25.0		76.2	46.5-120			
Dibenzo(a,h)anthracene	19.0	0.4	1.0	ug/L	25.0		75.9	49.6-120			
Benzo(g,h,i)perylene	17.8	0.5	1.0	ug/L	25.0		71.2	37-120			



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0589 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0589-BS1)											
Prepared: 22-Jun-2021						Analyzed: 23-Jun-2021 12:24					
Benzofluoranthenes, Total	46.6	0.8	2.0	ug/L	50.0		93.3	66.5-120			
1-Methylnaphthalene	21.9	0.3	1.0	ug/L	25.0		87.7	46.9-120			
Surrogate: 2-Fluorophenol	26.5			ug/L	37.5		70.7	33-120			
Surrogate: Phenol-d5	27.5			ug/L	37.5		73.2	38-120			
Surrogate: 2-Chlorophenol-d4	29.0			ug/L	37.5		77.3	41-120			
Surrogate: 1,2-Dichlorobenzene-d4	17.0			ug/L	25.0		67.9	20-120			
Surrogate: Nitrobenzene-d5	19.8			ug/L	25.0		79.0	27-120			
Surrogate: 2-Fluorobiphenyl	20.4			ug/L	25.0		81.5	33-120			
Surrogate: 2,4,6-Tribromophenol	37.3			ug/L	37.5		99.3	52-120			
Surrogate: p-Terphenyl-d14	24.6			ug/L	25.0		98.6	28-120			



The Boeing Company
PO Box 3707 M/S 1W-12
Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0626 - EPA 3546 (Microwave)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0626-BLK1)						Prepared: 23-Jun-2021 Analyzed: 24-Jun-2021 17:57					
Phenol	ND	16	67	ug/kg							U
bis(2-chloroethyl) ether	ND	17	67	ug/kg							U
2-Chlorophenol	ND	14	67	ug/kg							U
1,3-Dichlorobenzene	ND	16	67	ug/kg							U
1,4-Dichlorobenzene	ND	16	67	ug/kg							U
Benzyl Alcohol	ND	87	330	ug/kg							U
1,2-Dichlorobenzene	ND	18	67	ug/kg							U
2-Methylphenol	ND	23	67	ug/kg							U
2,2'-Oxybis(1-chloropropane)	ND	19	67	ug/kg							U
4-Methylphenol	ND	22	67	ug/kg							U
N-Nitroso-di-n-Propylamine	ND	21	67	ug/kg							U
Hexachloroethane	ND	19	67	ug/kg							U
Nitrobenzene	ND	26	67	ug/kg							U
Isophorone	ND	13	67	ug/kg							U
2-Nitrophenol	ND	63	67	ug/kg							U
2,4-Dimethylphenol	ND	16	67	ug/kg							U
Bis(2-Chloroethoxy)methane	ND	17	67	ug/kg							U
Benzoic acid	ND	251	670	ug/kg							U
2,4-Dichlorophenol	ND	75	330	ug/kg							U
1,2,4-Trichlorobenzene	ND	16	67	ug/kg							U
Naphthalene	ND	15	67	ug/kg							U
4-Chloroaniline	ND	100	330	ug/kg							U
Hexachlorobutadiene	ND	19	67	ug/kg							U
4-Chloro-3-Methylphenol	ND	115	330	ug/kg							U
2-Methylnaphthalene	ND	24	67	ug/kg							U
Hexachlorocyclopentadiene	ND	62	330	ug/kg							U
2,4,6-Trichlorophenol	ND	142	330	ug/kg							U
2,4,5-Trichlorophenol	ND	150	330	ug/kg							U
2-Chloronaphthalene	ND	21	67	ug/kg							U
2-Nitroaniline	ND	120	330	ug/kg							U
Dimethylphthalate	ND	27	67	ug/kg							U
Acenaphthylene	ND	21	67	ug/kg							U
2,6-Dinitrotoluene	ND	96	330	ug/kg							U
3-Nitroaniline	ND	104	330	ug/kg							U
Acenaphthene	ND	16	67	ug/kg							U



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0626 - EPA 3546 (Microwave)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0626-BLK1)						Prepared: 23-Jun-2021 Analyzed: 24-Jun-2021 17:57					
2,4-Dinitrophenol	ND	77	670	ug/kg							U
Dibenzofuran	ND	18	67	ug/kg							U
4-Nitrophenol	ND	48	330	ug/kg							U
2,4-Dinitrotoluene	ND	96	330	ug/kg							U
Fluorene	ND	16	67	ug/kg							U
Diethyl phthalate	22	21	67	ug/kg							J
4-Chlorophenylphenyl ether	ND	21	67	ug/kg							U
4-Nitroaniline	ND	102	330	ug/kg							U
4,6-Dinitro-2-methylphenol	ND	122	670	ug/kg							U
N-Nitrosodiphenylamine	ND	17	67	ug/kg							U
4-Bromophenyl phenyl ether	ND	19	67	ug/kg							U
Hexachlorobenzene	ND	19	67	ug/kg							U
Pentachlorophenol	ND	97	330	ug/kg							U
Phenanthrene	ND	20	67	ug/kg							U
Anthracene	ND	20	67	ug/kg							U
Carbazole	ND	15	67	ug/kg							U
Di-n-Butylphthalate	ND	33	67	ug/kg							U
Fluoranthene	ND	42	67	ug/kg							U
Pyrene	ND	47	67	ug/kg							U
Butylbenzylphthalate	ND	25	67	ug/kg							U
Benzo(a)anthracene	ND	19	67	ug/kg							U
3,3'-Dichlorobenzidine	ND	89	330	ug/kg							U
Chrysene	ND	21	67	ug/kg							U
bis(2-Ethylhexyl)phthalate	ND	24	67	ug/kg							U
Di-n-Octylphthalate	ND	19	67	ug/kg							U
Benzo(a)pyrene	ND	21	67	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	27	67	ug/kg							U
Dibenzo(a,h)anthracene	ND	25	67	ug/kg							U
Benzo(g,h,i)perylene	ND	26	67	ug/kg							U
Benzo(a)fluoranthene, Total	ND	33	67	ug/kg							U
1-Methylnaphthalene	ND	29	67	ug/kg							U
Surrogate: 2-Fluorophenol	28.1			ug/kg	37.5		74.9	22-120			
Surrogate: Phenol-d5	27.4			ug/kg	37.5		73.1	27-120			
Surrogate: 2-Chlorophenol-d4	29.6			ug/kg	37.5		79.0	36-120			
Surrogate: 1,2-Dichlorobenzene-d4	19.6			ug/kg	25.0		78.3	38-120			



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0626 - EPA 3546 (Microwave)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0626-BLK1)						Prepared: 23-Jun-2021	Analyzed: 24-Jun-2021 17:57				
Surrogate: Nitrobenzene-d5	19.0			ug/kg	25.0		76.1	32-120			
Surrogate: 2-Fluorobiphenyl	20.6			ug/kg	25.0		82.3	39-120			
Surrogate: 2,4,6-Tribromophenol	33.7			ug/kg	37.5		89.9	31-131			
Surrogate: p-Terphenyl-d14	22.8			ug/kg	25.0		91.1	31-130			
LCS (BJF0626-BS1)						Prepared: 23-Jun-2021	Analyzed: 24-Jun-2021 18:31				
Phenol	1380	16	67	ug/kg	1670		82.9	37-120			
bis(2-chloroethyl) ether	1210	17	67	ug/kg	1670		72.8	43-120			
2-Chlorophenol	1270	14	67	ug/kg	1670		76.3	45-120			
1,3-Dichlorobenzene	1240	16	67	ug/kg	1670		74.6	47-120			
1,4-Dichlorobenzene	1310	16	67	ug/kg	1670		78.7	46-120			
Benzyl Alcohol	1340	87	330	ug/kg	1670		80.2	16-120			
1,2-Dichlorobenzene	1300	18	67	ug/kg	1670		78.1	48-120			
2-Methylphenol	1240	23	67	ug/kg	1670		74.6	45-120			
2,2'-Oxybis(1-chloropropane)	1320	19	67	ug/kg	1670		79.3	36-120			
4-Methylphenol	1310	22	67	ug/kg	1670		78.4	47-120			
N-Nitroso-di-n-Propylamine	1210	21	67	ug/kg	1670		72.5	44-120			
Hexachloroethane	1200	19	67	ug/kg	1670		72.1	43-120			
Nitrobenzene	1300	26	67	ug/kg	1670		78.2	39-120			
Isophorone	1740	13	67	ug/kg	1670		104	75-138			
2-Nitrophenol	1520	63	67	ug/kg	1670		91.2	50-120			
2,4-Dimethylphenol	2700	16	67	ug/kg	4330		62.4	40-120			
Bis(2-Chloroethoxy)methane	1430	17	67	ug/kg	1670		85.7	49-120			
Benzoic acid	6010	251	670	ug/kg	7670		78.4	10-160			
2,4-Dichlorophenol	3300	75	330	ug/kg	4330		76.2	51-120			
1,2,4-Trichlorobenzene	1380	16	67	ug/kg	1670		82.6	50-120			
Naphthalene	1460	15	67	ug/kg	1670		87.4	50-120			
4-Chloroaniline	2430	100	330	ug/kg	4330		56.0	17-149			
Hexachlorobutadiene	1370	19	67	ug/kg	1670		82.0	46-120			
4-Chloro-3-Methylphenol	3270	115	330	ug/kg	4330		75.5	54-120			
2-Methylnaphthalene	1400	24	67	ug/kg	1670		84.1	54-120			
Hexachlorocyclopentadiene	2890	62	330	ug/kg	4330		66.7	23-149			Q
2,4,6-Trichlorophenol	3520	142	330	ug/kg	4330		81.2	51-120			
2,4,5-Trichlorophenol	3490	150	330	ug/kg	4330		80.6	52-120			
2-Chloronaphthalene	1400	21	67	ug/kg	1670		83.9	48-120			



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0626 - EPA 3546 (Microwave)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0626-BS1)						Prepared: 23-Jun-2021 Analyzed: 24-Jun-2021 18:31					
2-Nitroaniline	3300	120	330	ug/kg	4330		76.1	51-120			
Dimethylphthalate	1460	27	67	ug/kg	1670		87.6	56-120			
Acenaphthylene	1370	21	67	ug/kg	1670		82.4	56-120			
2,6-Dinitrotoluene	4110	96	330	ug/kg	4330		94.7	54-124			
3-Nitroaniline	2900	104	330	ug/kg	4330		67.0	39-142			
Acenaphthene	1450	16	67	ug/kg	1670		86.9	48-120			
2,4-Dinitrophenol	7160	77	670	ug/kg	7670		93.4	15-169			Q
Dibenzofuran	1490	18	67	ug/kg	1670		89.5	55-120			
4-Nitrophenol	2940	48	330	ug/kg	4330		67.7	23-130			
2,4-Dinitrotoluene	3770	96	330	ug/kg	4330		87.0	57-127			
Fluorene	1540	16	67	ug/kg	1670		92.3	55-120			
Diethyl phthalate	1500	21	67	ug/kg	1670		89.9	54-120			
4-Chlorophenylphenyl ether	1520	21	67	ug/kg	1670		91.1	52-120			
4-Nitroaniline	3420	102	330	ug/kg	4330		79.0	47-124			
4,6-Dinitro-2-methylphenol	5360	122	670	ug/kg	7670		69.9	10-157			Q
N-Nitrosodiphenylamine	1410	17	67	ug/kg	1670		84.7	54-138			
4-Bromophenyl phenyl ether	1480	19	67	ug/kg	1670		88.9	50-120			
Hexachlorobenzene	1450	19	67	ug/kg	1670		86.7	50-121			
Pentachlorophenol	3220	97	330	ug/kg	4330		74.2	40-123			
Phenanthrene	1430	20	67	ug/kg	1670		86.1	55-120			
Anthracene	1410	20	67	ug/kg	1670		84.7	57-120			
Carbazole	1300	15	67	ug/kg	1670		78.0	30-168			
Di-n-Butylphthalate	1450	33	67	ug/kg	1670		87.1	60-120			
Fluoranthene	1520	42	67	ug/kg	1670		91.4	52-129			
Pyrene	1800	47	67	ug/kg	1670		108	49-134			Q
Butylbenzylphthalate	1550	25	67	ug/kg	1670		93.1	44-144			
Benzo(a)anthracene	1500	19	67	ug/kg	1670		89.8	56-124			
3,3'-Dichlorobenzidine	3040	89	330	ug/kg	2670		114	37-140			
Chrysene	1630	21	67	ug/kg	1670		97.8	53-124			
bis(2-Ethylhexyl)phthalate	1550	24	67	ug/kg	1670		93.0	63-128			
Di-n-Octylphthalate	1680	19	67	ug/kg	1670		101	59-120			
Benzo(b)fluoranthene	1740	67	67	ug/kg	1670		104	42-132			
Benzo(k)fluoranthene	1590	67	67	ug/kg	1670		95.5	60-147			
Benzo(a)pyrene	1520	21	67	ug/kg	1670		90.9	53-120			
Indeno(1,2,3-cd)pyrene	1020	27	67	ug/kg	1670		61.3	40-128			



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Seattle WA, 98124

Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

Reported:
02-Jul-2021 14:20

Semivolatile Organic Compounds - Quality Control

Batch BJF0626 - EPA 3546 (Microwave)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJF0626-BS1)					Prepared: 23-Jun-2021		Analyzed: 24-Jun-2021 18:31				
Dibenzo(a,h)anthracene	1040	25	67	ug/kg	1670		62.2	58-145			
Benzo(g,h,i)perylene	934	26	67	ug/kg	1670		56.0	44-125			Q
Benzo(a)fluoranthene, Total	3280	33	67	ug/kg	3330		98.5	30-160			
1-Methylnaphthalene	1500	29	67	ug/kg	1670		90.0	55-120			
Surrogate: 2-Fluorophenol	27.9			ug/kg	37.5		74.5	22-120			
Surrogate: Phenol-d5	26.9			ug/kg	37.5		71.7	27-120			
Surrogate: 2-Chlorophenol-d4	29.3			ug/kg	37.5		78.1	36-120			
Surrogate: 1,2-Dichlorobenzene-d4	18.3			ug/kg	25.0		73.1	38-120			
Surrogate: Nitrobenzene-d5	19.4			ug/kg	25.0		77.6	32-120			
Surrogate: 2-Fluorobiphenyl	20.4			ug/kg	25.0		81.7	39-120			
Surrogate: 2,4,6-Tribromophenol	35.8			ug/kg	37.5		95.4	31-131			
Surrogate: p-Terphenyl-d14	22.9			ug/kg	25.0		91.6	31-130			



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Project: Boeing Renton Apron R
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Petroleum Hydrocarbons - Quality Control

Batch BJF0588 - EPA 3510C SepF

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0588-BLK1)									
				Prepared: 22-Jun-2021 Analyzed: 23-Jun-2021 10:43					
Diesel Range Organics (C12-C24)	ND	0.100	mg/L						U
Motor Oil Range Organics (C24-C38)	ND	0.200	mg/L						U
Surrogate: o-Terphenyl	0.185		mg/L	0.225	82.0	50-150			
LCS (BJF0588-BS1)									
				Prepared: 22-Jun-2021 Analyzed: 23-Jun-2021 11:04					
Diesel Range Organics (C12-C24)	2.14	0.100	mg/L	3.00	71.3	56-120			
Surrogate: o-Terphenyl	0.185		mg/L	0.225	82.2	50-150			



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Wet Chemistry - Quality Control

Batch BJF0581 - No Prep Wet Chem

Instrument: Accumet AB150 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
LCS (BJF0581-BS1)									
Prepared: 21-Jun-2021 Analyzed: 21-Jun-2021 17:45									
pH	6.97	0.01	0.01	pH Units	7.00	99.6	99.2-100.8		



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Wet Chemistry - Quality Control

Batch BJF0595 - No Prep Wet Chem

Instrument: N/A

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0595-BLK1)					Prepared: 22-Jun-2021 Analyzed: 22-Jun-2021 09:59					
Settleable Solids	ND	0.1	0.1	mL/L						U



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Wet Chemistry - Quality Control

Batch BJF0596 - EPA 3535A SPE (Solid Phase Extraction)

Instrument: Bal2 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BJF0596-BLK1)										
					Prepared: 22-Jun-2021		Analyzed: 22-Jun-2021 10:17			
HEM Oil & Grease	ND	5	5	mg/L						U
SGT-HEM NP Oil & Grease	ND	5	5	mg/L						U
HEM Polar Oil & Grease	ND	5	5	mg/L						U
LCS (BJF0596-BS1)										
					Prepared: 22-Jun-2021		Analyzed: 22-Jun-2021 10:17			
HEM Oil & Grease	36	5	5	mg/L	40.77		88.3	78-114		
SGT-HEM NP Oil & Grease	15	5	5	mg/L	20.38		73.1	64-132		
HEM Polar Oil & Grease	21	5	5	mg/L	20.39		103	0-200		



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Certified Analyses included in this Report

Analyte	Certifications
EPA 1664B in Water	
HEM Oil & Grease	WADOE,NELAP
HEM Oil & Grease	NELAP
SGT-HEM NP Oil & Grease	NELAP
SGT-HEM NP Oil & Grease	WADOE,NELAP
HEM Polar Oil & Grease	WADOE,NELAP
HEM Polar Oil & Grease	NELAP
EPA 8260D in Solid	
Chloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloromethane	DoD-ELAP,NELAP,ADEC
Vinyl Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Chloride	DoD-ELAP,NELAP,ADEC
Bromomethane	WADOE,DoD-ELAP,NELAP,ADEC
Bromomethane	DoD-ELAP,NELAP,ADEC
Chloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloroethane	DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Acrolein	WADOE,DoD-ELAP,NELAP
Acrolein	DoD-ELAP,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,NELAP,ADEC
1,1,2-Trichloro-1,2,2-Trifluoroethane	WADOE,DoD-ELAP,NELAP,ADEC
Acetone	WADOE,DoD-ELAP,NELAP
Acetone	DoD-ELAP,NELAP
1,1-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
1,1-Dichloroethene	DoD-ELAP,NELAP,ADEC
Iodomethane	DoD-ELAP,NELAP,ADEC
Iodomethane	WADOE,DoD-ELAP,NELAP,ADEC
Methylene Chloride	DoD-ELAP,NELAP,ADEC
Methylene Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Acrylonitrile	WADOE,DoD-ELAP,NELAP
Acrylonitrile	DoD-ELAP,NELAP
Carbon Disulfide	DoD-ELAP,NELAP,ADEC
Carbon Disulfide	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	DoD-ELAP,NELAP,ADEC



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Vinyl Acetate	DoD-ELAP,NELAP
Vinyl Acetate	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethane	DoD-ELAP,NELAP,ADEC
1,1-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Butanone	DoD-ELAP,NELAP
2-Butanone	WADOE,DoD-ELAP,NELAP
2,2-Dichloropropane	DoD-ELAP,NELAP
2,2-Dichloropropane	WADOE,DoD-ELAP,NELAP
cis-1,2-Dichloroethene	DoD-ELAP,NELAP,ADEC
cis-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	DoD-ELAP,NELAP,ADEC
Bromochloromethane	DoD-ELAP,NELAP,ADEC
Bromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	DoD-ELAP,NELAP,ADEC
1,1-Dichloropropene	DoD-ELAP,NELAP,ADEC
1,1-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	DoD-ELAP,NELAP,ADEC
Trichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Trichloroethene	DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Bromodichloromethane	DoD-ELAP,NELAP,ADEC
Bromodichloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromomethane	DoD-ELAP,NELAP,ADEC
Dibromomethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Chloroethyl vinyl ether	DoD-ELAP,NELAP
2-Chloroethyl vinyl ether	WADOE,DoD-ELAP,NELAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP
4-Methyl-2-Pentanone	WADOE,DoD-ELAP,NELAP
cis-1,3-Dichloropropene	DoD-ELAP,NELAP,ADEC
cis-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Toluene	DoD-ELAP,NELAP,ADEC



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Toluene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	DoD-ELAP,NELAP,ADEC
2-Hexanone	WADOE,DoD-ELAP,NELAP
2-Hexanone	DoD-ELAP,NELAP
1,1,2-Trichloroethane	DoD-ELAP,NELAP,ADEC
1,1,2-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	DoD-ELAP,NELAP,ADEC
Tetrachloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Tetrachloroethene	DoD-ELAP,NELAP,ADEC
Dibromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromochloromethane	DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	WADOE,DoD-ELAP,NELAP,ADEC
Chlorobenzene	DoD-ELAP,NELAP,ADEC
Chlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Ethylbenzene	DoD-ELAP,NELAP,ADEC
Ethylbenzene	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	DoD-ELAP,NELAP,ADEC
m,p-Xylene	DoD-ELAP,NELAP,ADEC
m,p-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	DoD-ELAP,NELAP,ADEC
Xylenes, total	WADOE
Xylenes, total	
Styrene	WADOE,DoD-ELAP,NELAP,ADEC
Styrene	DoD-ELAP,NELAP,ADEC
Bromoform	DoD-ELAP,NELAP,ADEC
Bromoform	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	DoD-ELAP,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	DoD-ELAP,NELAP
trans-1,4-Dichloro 2-Butene	WADOE,DoD-ELAP,NELAP
n-Propylbenzene	DoD-ELAP,NELAP
n-Propylbenzene	WADOE,DoD-ELAP,NELAP



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Bromobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Bromobenzene	DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	WADOE,DoD-ELAP,NELAP,ADEC
2-Chlorotoluene	WADOE,DoD-ELAP,NELAP
2-Chlorotoluene	DoD-ELAP,NELAP
4-Chlorotoluene	DoD-ELAP,NELAP
4-Chlorotoluene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	DoD-ELAP,NELAP
4-Isopropyl Toluene	WADOE,DoD-ELAP,NELAP
4-Isopropyl Toluene	DoD-ELAP,NELAP
1,3-Dichlorobenzene	DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	DoD-ELAP,NELAP
n-Butylbenzene	DoD-ELAP,NELAP
n-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	DoD-ELAP,NELAP
1,2-Dibromo-3-chloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dibromo-3-chloropropane	DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	WADOE,DoD-ELAP,NELAP,ADEC
Naphthalene	DoD-ELAP,NELAP
Naphthalene	WADOE,DoD-ELAP,NELAP
1,2,3-Trichlorobenzene	DoD-ELAP,NELAP,ADEC
1,2,3-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Methyl tert-butyl Ether	WADOE,DoD-ELAP,NELAP



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Methyl tert-butyl Ether DoD-ELAP,NELAP

n-Hexane

n-Hexane

WADOE

2-Pentanone

WADOE

2-Pentanone

Dibromofluoromethane

WADOE

Dibromofluoromethane

4-Bromofluorobenzene

WADOE

4-Bromofluorobenzene

EPA 8260D in Water

Chloromethane

DoD-ELAP,ADEC,NELAP,WADOE

Chloromethane

DoD-ELAP,ADEC,NELAP

Vinyl Chloride

DoD-ELAP,ADEC,NELAP,WADOE

Vinyl Chloride

DoD-ELAP,ADEC,NELAP

Bromomethane

DoD-ELAP,ADEC,NELAP,WADOE

Bromomethane

DoD-ELAP,ADEC,NELAP

Chloroethane

DoD-ELAP,ADEC,NELAP

Chloroethane

DoD-ELAP,ADEC,NELAP,WADOE

Trichlorofluoromethane

DoD-ELAP,ADEC,NELAP

Trichlorofluoromethane

DoD-ELAP,ADEC,NELAP,WADOE

Acrolein

DoD-ELAP,NELAP

Acrolein

DoD-ELAP,NELAP,WADOE

1,1,2-Trichloro-1,2,2-Trifluoroethane

DoD-ELAP,ADEC,NELAP

1,1,2-Trichloro-1,2,2-Trifluoroethane

DoD-ELAP,ADEC,NELAP,WADOE

Acetone

DoD-ELAP,ADEC,NELAP,WADOE

Acetone

DoD-ELAP,ADEC,NELAP

1,1-Dichloroethene

DoD-ELAP,ADEC,NELAP

1,1-Dichloroethene

DoD-ELAP,ADEC,NELAP,WADOE

Iodomethane

DoD-ELAP,NELAP

Iodomethane

DoD-ELAP,NELAP,WADOE

Methylene Chloride

DoD-ELAP,ADEC,NELAP,WADOE

Methylene Chloride

DoD-ELAP,ADEC,NELAP

Acrylonitrile

DoD-ELAP,NELAP,WADOE

Acrylonitrile

DoD-ELAP,NELAP

Carbon Disulfide

DoD-ELAP,NELAP,WADOE

Carbon Disulfide

DoD-ELAP,NELAP

trans-1,2-Dichloroethene

DoD-ELAP,ADEC,NELAP

trans-1,2-Dichloroethene

DoD-ELAP,ADEC,NELAP,WADOE

Vinyl Acetate

DoD-ELAP,NELAP,WADOE



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Vinyl Acetate	DoD-ELAP,NELAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP
Dibromomethane	DoD-ELAP,ADEC,NELAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP



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trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP
2-Hexanone	DoD-ELAP,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP
Ethylbenzene	DoD-ELAP,ADEC,NELAP
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP
Bromoform	DoD-ELAP,NELAP
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP
Isopropyl Benzene	DoD-ELAP,NELAP



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Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP
n-Hexane	
n-Hexane	WADOE



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2-Pentanone

2-Pentanone

WADOE

EPA 8270E in Solid

Phenol

DoD-ELAP,NELAP

Phenol

DoD-ELAP,NELAP,WADOE

bis(2-chloroethyl) ether

DoD-ELAP,NELAP,WADOE

bis(2-chloroethyl) ether

DoD-ELAP,NELAP

2-Chlorophenol

DoD-ELAP,NELAP,WADOE

2-Chlorophenol

DoD-ELAP,NELAP

1,3-Dichlorobenzene

DoD-ELAP,NELAP,WADOE

1,3-Dichlorobenzene

DoD-ELAP,NELAP

1,4-Dichlorobenzene

DoD-ELAP,NELAP

1,4-Dichlorobenzene

DoD-ELAP,NELAP,WADOE

Benzyl Alcohol

DoD-ELAP,NELAP,WADOE

Benzyl Alcohol

DoD-ELAP,NELAP

1,2-Dichlorobenzene

DoD-ELAP,NELAP

1,2-Dichlorobenzene

DoD-ELAP,NELAP,WADOE

2-Methylphenol

DoD-ELAP,NELAP

2-Methylphenol

DoD-ELAP,NELAP,WADOE

2,2'-Oxybis(1-chloropropane)

DoD-ELAP,NELAP

2,2'-Oxybis(1-chloropropane)

DoD-ELAP,NELAP

4-Methylphenol

DoD-ELAP,NELAP

4-Methylphenol

DoD-ELAP,NELAP,WADOE

N-Nitroso-di-n-Propylamine

DoD-ELAP,NELAP,WADOE

N-Nitroso-di-n-Propylamine

DoD-ELAP,NELAP

Hexachloroethane

DoD-ELAP,NELAP

Hexachloroethane

DoD-ELAP,NELAP,WADOE

Nitrobenzene

DoD-ELAP,NELAP,WADOE

Nitrobenzene

DoD-ELAP,NELAP

Isophorone

DoD-ELAP,NELAP,WADOE

Isophorone

DoD-ELAP,NELAP

2-Nitrophenol

DoD-ELAP,NELAP

2-Nitrophenol

DoD-ELAP,NELAP,WADOE

2,4-Dimethylphenol

DoD-ELAP,NELAP

2,4-Dimethylphenol

DoD-ELAP,NELAP,WADOE

Bis(2-Chloroethoxy)methane

DoD-ELAP,NELAP,WADOE

Bis(2-Chloroethoxy)methane

DoD-ELAP,NELAP

Benzoic acid

DoD-ELAP,NELAP,WADOE

Benzoic acid

DoD-ELAP,NELAP



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2,4-Dichlorophenol	DoD-ELAP,NELAP
2,4-Dichlorophenol	DoD-ELAP,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP
Naphthalene	DoD-ELAP,NELAP,ADEC
Naphthalene	DoD-ELAP,NELAP,WADOE,ADEC
4-Chloroaniline	DoD-ELAP,NELAP,WADOE
4-Chloroaniline	DoD-ELAP,NELAP
Hexachlorobutadiene	DoD-ELAP,NELAP
Hexachlorobutadiene	DoD-ELAP,NELAP,WADOE
4-Chloro-3-Methylphenol	DoD-ELAP,NELAP,WADOE
4-Chloro-3-Methylphenol	DoD-ELAP,NELAP
2-Methylnaphthalene	DoD-ELAP,NELAP,ADEC
2-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Hexachlorocyclopentadiene	DoD-ELAP,NELAP,WADOE
Hexachlorocyclopentadiene	DoD-ELAP,NELAP
2,4,6-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2,4,6-Trichlorophenol	DoD-ELAP,NELAP
2,4,5-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2,4,5-Trichlorophenol	DoD-ELAP,NELAP
2-Chloronaphthalene	DoD-ELAP,NELAP,WADOE
2-Chloronaphthalene	DoD-ELAP,NELAP
2-Nitroaniline	DoD-ELAP,NELAP
2-Nitroaniline	DoD-ELAP,NELAP,WADOE
Dimethylphthalate	DoD-ELAP,NELAP
Dimethylphthalate	DoD-ELAP,NELAP,WADOE
Acenaphthylene	DoD-ELAP,NELAP,ADEC
Acenaphthylene	DoD-ELAP,NELAP,WADOE,ADEC
2,6-Dinitrotoluene	DoD-ELAP,NELAP
2,6-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
3-Nitroaniline	DoD-ELAP,NELAP
3-Nitroaniline	DoD-ELAP,NELAP,WADOE
Acenaphthene	DoD-ELAP,NELAP,ADEC
Acenaphthene	DoD-ELAP,NELAP,WADOE,ADEC
2,4-Dinitrophenol	DoD-ELAP,NELAP
2,4-Dinitrophenol	DoD-ELAP,NELAP,WADOE
Dibenzofuran	DoD-ELAP,NELAP,ADEC
Dibenzofuran	DoD-ELAP,NELAP,WADOE,ADEC
4-Nitrophenol	DoD-ELAP,NELAP,WADOE



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4-Nitrophenol	DoD-ELAP,NELAP
2,4-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
2,4-Dinitrotoluene	DoD-ELAP,NELAP
Fluorene	DoD-ELAP,NELAP,ADEC
Fluorene	DoD-ELAP,NELAP,WADOE,ADEC
Diethyl phthalate	DoD-ELAP,NELAP
Diethyl phthalate	DoD-ELAP,NELAP,WADOE
4-Chlorophenylphenyl ether	DoD-ELAP,NELAP
4-Chlorophenylphenyl ether	DoD-ELAP,NELAP,WADOE
4-Nitroaniline	DoD-ELAP,NELAP,WADOE
4-Nitroaniline	DoD-ELAP,NELAP
4,6-Dinitro-2-methylphenol	DoD-ELAP,NELAP,WADOE
4,6-Dinitro-2-methylphenol	DoD-ELAP,NELAP
N-Nitrosodiphenylamine	DoD-ELAP,NELAP,WADOE
N-Nitrosodiphenylamine	DoD-ELAP,NELAP
4-Bromophenyl phenyl ether	DoD-ELAP,NELAP,WADOE
4-Bromophenyl phenyl ether	DoD-ELAP,NELAP
Hexachlorobenzene	DoD-ELAP,NELAP
Hexachlorobenzene	DoD-ELAP,NELAP,WADOE
Pentachlorophenol	DoD-ELAP,NELAP
Pentachlorophenol	DoD-ELAP,NELAP,WADOE
Phenanthrene	DoD-ELAP,NELAP,ADEC
Phenanthrene	DoD-ELAP,NELAP,WADOE,ADEC
Anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Anthracene	DoD-ELAP,NELAP,ADEC
Carbazole	DoD-ELAP,NELAP,WADOE,ADEC
Carbazole	DoD-ELAP,NELAP,ADEC
Di-n-Butylphthalate	DoD-ELAP,NELAP,WADOE
Di-n-Butylphthalate	DoD-ELAP,NELAP
Fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Fluoranthene	DoD-ELAP,NELAP,ADEC
Pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Pyrene	DoD-ELAP,NELAP,ADEC
Butylbenzylphthalate	DoD-ELAP,NELAP,WADOE
Butylbenzylphthalate	DoD-ELAP,NELAP
Benzo(a)anthracene	DoD-ELAP,NELAP,ADEC
Benzo(a)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
3,3'-Dichlorobenzidine	DoD-ELAP,NELAP
3,3'-Dichlorobenzidine	DoD-ELAP,NELAP,WADOE



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Chrysene	DoD-ELAP,NELAP,WADOE,ADEC
Chrysene	DoD-ELAP,NELAP,ADEC
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP,WADOE
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP
Di-n-Octylphthalate	DoD-ELAP,NELAP,WADOE
Di-n-Octylphthalate	DoD-ELAP,NELAP
Benzo(b)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(b)fluoranthene	DoD-ELAP,NELAP,ADEC
Benzo(k)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(k)fluoranthene	DoD-ELAP,NELAP,ADEC
Benzo(a)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(a)pyrene	DoD-ELAP,NELAP,ADEC
Indeno(1,2,3-cd)pyrene	DoD-ELAP,NELAP,ADEC
Indeno(1,2,3-cd)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Dibenzo(a,h)anthracene	DoD-ELAP,NELAP,ADEC
Dibenzo(a,h)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(g,h,i)perylene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(g,h,i)perylene	DoD-ELAP,NELAP,ADEC
Benzofluoranthenes, Total	DoD-ELAP,NELAP,ADEC
Benzofluoranthenes, Total	DoD-ELAP,NELAP,WADOE,ADEC
1-Methylnaphthalene	DoD-ELAP,NELAP,ADEC
1-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
N-Nitrosodimethylamine	DoD-ELAP,NELAP
N-Nitrosodimethylamine	DoD-ELAP,NELAP,WADOE
Aniline	DoD-ELAP,NELAP,WADOE
Aniline	DoD-ELAP,NELAP
Benzidine	DoD-ELAP,NELAP
Benzidine	DoD-ELAP,NELAP,WADOE
Retene	DoD-ELAP,NELAP,WADOE,ADEC
Retene	DoD-ELAP,NELAP,ADEC
Perylene	DoD-ELAP,NELAP,WADOE,ADEC
Perylene	DoD-ELAP,NELAP,ADEC
Pyridine	DoD-ELAP,NELAP
Pyridine	DoD-ELAP,NELAP,WADOE
N-Nitrosomethylethylamine	NELAP
N-Nitrosomethylethylamine	NELAP,WADOE
2,6-Dichlorophenol	NELAP
2,6-Dichlorophenol	NELAP,WADOE
alpha-Terpineol	DoD-ELAP,NELAP



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alpha-Terpineol	DoD-ELAP,NELAP,WADOE
2,3,4,6-Tetrachlorophenol	DoD-ELAP
2,3,4,6-Tetrachlorophenol	DoD-ELAP,WADOE
Triphenyl Phosphate	DoD-ELAP,NELAP,WADOE
Triphenyl Phosphate	DoD-ELAP,NELAP
Butyl Diphenyl Phosphate	DoD-ELAP,NELAP,WADOE
Butyl Diphenyl Phosphate	DoD-ELAP,NELAP
Dibutyl Phenyl Phosphate	DoD-ELAP,NELAP,WADOE
Dibutyl Phenyl Phosphate	DoD-ELAP,NELAP
Tributyl Phosphate	DoD-ELAP,NELAP,WADOE
Tributyl Phosphate	DoD-ELAP,NELAP
Butylated Hydroxytoluene	DoD-ELAP,NELAP,WADOE
Butylated Hydroxytoluene	DoD-ELAP,NELAP
Azobenzene (1,2-DP-Hydrazine)	NELAP
Azobenzene (1,2-DP-Hydrazine)	NELAP
4-Chloroguaiacol	
4-Chloroguaiacol	WADOE
3,4-Dichloroguaiacol	WADOE
3,4-Dichloroguaiacol	
4,5-Dichloroguaiacol	
4,5-Dichloroguaiacol	WADOE
4,6-Dichloroguaiacol	WADOE
4,6-Dichloroguaiacol	
Tetrachloroguaiacol	DoD-ELAP
Tetrachloroguaiacol	DoD-ELAP,WADOE
3,4,5-Trichloroguaiacol	WADOE
3,4,5-Trichloroguaiacol	
3,4,6-Trichloroguaiacol	
3,4,6-Trichloroguaiacol	WADOE
4,5,6-Trichloroguaiacol	WADOE
4,5,6-Trichloroguaiacol	
Guaiacol	
Guaiacol	WADOE
1,2,4,5-Tetrachlorobenzene	DoD-ELAP,WADOE
1,2,4,5-Tetrachlorobenzene	DoD-ELAP

EPA 8270E in Water

Phenol	WADOE,DoD-ELAP,NELAP
Phenol	DoD-ELAP,NELAP
bis(2-chloroethyl) ether	DoD-ELAP,NELAP



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bis(2-chloroethyl) ether	WADOE,DoD-ELAP,NELAP
2-Chlorophenol	WADOE,DoD-ELAP,NELAP
2-Chlorophenol	DoD-ELAP,NELAP
1,3-Dichlorobenzene	DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
Benzyl Alcohol	WADOE,DoD-ELAP,NELAP
Benzyl Alcohol	DoD-ELAP,NELAP
1,2-Dichlorobenzene	DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
2-Methylphenol	WADOE,DoD-ELAP,NELAP
2-Methylphenol	DoD-ELAP,NELAP
2,2'-Oxybis(1-chloropropane)	DoD-ELAP
2,2'-Oxybis(1-chloropropane)	DoD-ELAP
4-Methylphenol	DoD-ELAP,NELAP
4-Methylphenol	WADOE,DoD-ELAP,NELAP
N-Nitroso-di-n-Propylamine	DoD-ELAP,NELAP
N-Nitroso-di-n-Propylamine	WADOE,DoD-ELAP,NELAP
Hexachloroethane	WADOE,DoD-ELAP,NELAP
Hexachloroethane	DoD-ELAP,NELAP
Nitrobenzene	DoD-ELAP,NELAP
Nitrobenzene	WADOE,DoD-ELAP,NELAP
Isophorone	WADOE,DoD-ELAP,NELAP
Isophorone	DoD-ELAP,NELAP
2-Nitrophenol	WADOE,DoD-ELAP,NELAP
2-Nitrophenol	DoD-ELAP,NELAP
2,4-Dimethylphenol	WADOE,DoD-ELAP,NELAP
2,4-Dimethylphenol	DoD-ELAP,NELAP
Bis(2-Chloroethoxy)methane	DoD-ELAP,NELAP
Bis(2-Chloroethoxy)methane	WADOE,DoD-ELAP,NELAP
Benzoic acid	DoD-ELAP,NELAP
Benzoic acid	WADOE,DoD-ELAP,NELAP
2,4-Dichlorophenol	WADOE,DoD-ELAP,NELAP
2,4-Dichlorophenol	DoD-ELAP,NELAP
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP
Naphthalene	WADOE,ADEC,DoD-ELAP,NELAP
Naphthalene	ADEC,DoD-ELAP,NELAP



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4-Chloroaniline	WADOE,DoD-ELAP,NELAP
4-Chloroaniline	DoD-ELAP,NELAP
Hexachlorobutadiene	WADOE,DoD-ELAP,NELAP
Hexachlorobutadiene	DoD-ELAP,NELAP
4-Chloro-3-Methylphenol	WADOE,DoD-ELAP,NELAP
4-Chloro-3-Methylphenol	DoD-ELAP,NELAP
2-Methylnaphthalene	ADEC,DoD-ELAP,NELAP
2-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP
Hexachlorocyclopentadiene	WADOE,DoD-ELAP,NELAP
Hexachlorocyclopentadiene	DoD-ELAP,NELAP
2,4,6-Trichlorophenol	DoD-ELAP,NELAP
2,4,6-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2,4,5-Trichlorophenol	DoD-ELAP,NELAP
2,4,5-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2-Chloronaphthalene	WADOE,DoD-ELAP,NELAP
2-Chloronaphthalene	DoD-ELAP,NELAP
2-Nitroaniline	DoD-ELAP,NELAP
2-Nitroaniline	WADOE,DoD-ELAP,NELAP
Dimethylphthalate	DoD-ELAP,NELAP
Dimethylphthalate	WADOE,DoD-ELAP,NELAP
Acenaphthylene	WADOE,ADEC,DoD-ELAP,NELAP
Acenaphthylene	ADEC,DoD-ELAP,NELAP
2,6-Dinitrotoluene	DoD-ELAP,NELAP
2,6-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
3-Nitroaniline	WADOE,DoD-ELAP,NELAP
3-Nitroaniline	DoD-ELAP,NELAP
Acenaphthene	ADEC,DoD-ELAP,NELAP
Acenaphthene	WADOE,ADEC,DoD-ELAP,NELAP
2,4-Dinitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dinitrophenol	DoD-ELAP,NELAP
Dibenzofuran	ADEC,DoD-ELAP,NELAP
Dibenzofuran	WADOE,ADEC,DoD-ELAP,NELAP
4-Nitrophenol	DoD-ELAP,NELAP
4-Nitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
2,4-Dinitrotoluene	DoD-ELAP,NELAP
Fluorene	ADEC,DoD-ELAP,NELAP
Fluorene	WADOE,ADEC,DoD-ELAP,NELAP
Diethyl phthalate	WADOE,DoD-ELAP,NELAP



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Diethyl phthalate	DoD-ELAP,NELAP
4-Chlorophenylphenyl ether	WADOE,DoD-ELAP,NELAP
4-Chlorophenylphenyl ether	DoD-ELAP,NELAP
4-Nitroaniline	DoD-ELAP,NELAP
4-Nitroaniline	WADOE,DoD-ELAP,NELAP
4,6-Dinitro-2-methylphenol	WADOE,DoD-ELAP,NELAP
4,6-Dinitro-2-methylphenol	DoD-ELAP,NELAP
N-Nitrosodiphenylamine	DoD-ELAP
N-Nitrosodiphenylamine	DoD-ELAP
4-Bromophenyl phenyl ether	DoD-ELAP,NELAP
4-Bromophenyl phenyl ether	WADOE,DoD-ELAP,NELAP
Hexachlorobenzene	DoD-ELAP,NELAP
Hexachlorobenzene	WADOE,DoD-ELAP,NELAP
Pentachlorophenol	DoD-ELAP,NELAP
Pentachlorophenol	WADOE,DoD-ELAP,NELAP
Phenanthrene	ADEC,DoD-ELAP,NELAP
Phenanthrene	WADOE,ADEC,DoD-ELAP,NELAP
Anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Anthracene	ADEC,DoD-ELAP,NELAP
Carbazole	WADOE,ADEC,DoD-ELAP,NELAP
Carbazole	ADEC,DoD-ELAP,NELAP
Di-n-Butylphthalate	WADOE,DoD-ELAP,NELAP
Di-n-Butylphthalate	DoD-ELAP,NELAP
Fluoranthene	WADOE,ADEC,DoD-ELAP,NELAP
Fluoranthene	ADEC,DoD-ELAP,NELAP
Pyrene	ADEC,DoD-ELAP,NELAP
Pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Butylbenzylphthalate	WADOE,DoD-ELAP,NELAP
Butylbenzylphthalate	DoD-ELAP,NELAP
Benzo(a)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(a)anthracene	ADEC,DoD-ELAP,NELAP
3,3'-Dichlorobenzidine	DoD-ELAP
3,3'-Dichlorobenzidine	DoD-ELAP
Chrysene	WADOE,ADEC,DoD-ELAP,NELAP
Chrysene	ADEC,DoD-ELAP,NELAP
bis(2-Ethylhexyl)phthalate	WADOE,DoD-ELAP,NELAP
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP
Di-n-Octylphthalate	WADOE,DoD-ELAP,NELAP
Di-n-Octylphthalate	DoD-ELAP,NELAP



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
Project Manager: Nick Garson

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02-Jul-2021 14:20

Benzo(b)fluoranthene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(b)fluoranthene	ADEC,DoD-ELAP,NELAP
Benzo(k)fluoranthene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(k)fluoranthene	ADEC,DoD-ELAP,NELAP
Benzo(a)pyrene	ADEC,DoD-ELAP,NELAP
Benzo(a)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Indeno(1,2,3-cd)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Indeno(1,2,3-cd)pyrene	ADEC,DoD-ELAP,NELAP
Dibenzo(a,h)anthracene	ADEC,DoD-ELAP,NELAP
Dibenzo(a,h)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(g,h,i)perylene	ADEC,DoD-ELAP,NELAP
Benzo(g,h,i)perylene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(a)fluoranthene, Total	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(a)fluoranthene, Total	ADEC,DoD-ELAP,NELAP
1-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP
1-Methylnaphthalene	ADEC,DoD-ELAP,NELAP
N-Nitrosodimethylamine	WADOE,DoD-ELAP,NELAP
N-Nitrosodimethylamine	DoD-ELAP,NELAP
Aniline	WADOE,DoD-ELAP,NELAP
Aniline	DoD-ELAP,NELAP
Benzidine	DoD-ELAP,NELAP
Benzidine	WADOE,DoD-ELAP,NELAP
Retene	ADEC,DoD-ELAP,NELAP
Retene	WADOE,ADEC,DoD-ELAP,NELAP
Perylene	ADEC
Perylene	WADOE,ADEC
Pyridine	WADOE,DoD-ELAP,NELAP
Pyridine	DoD-ELAP,NELAP
2,6-Dichlorophenol	WADOE
2,6-Dichlorophenol	
alpha-Terpineol	DoD-ELAP,NELAP
alpha-Terpineol	WADOE,DoD-ELAP,NELAP
1,4-Dioxane	WADOE,DoD-ELAP,NELAP
1,4-Dioxane	DoD-ELAP,NELAP
2,3,4,6-Tetrachlorophenol	WADOE,DoD-ELAP
2,3,4,6-Tetrachlorophenol	DoD-ELAP
Triphenyl Phosphate	WADOE,DoD-ELAP,NELAP
Triphenyl Phosphate	DoD-ELAP,NELAP
Butyl Diphenyl Phosphate	WADOE,DoD-ELAP,NELAP



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Butyl Diphenyl Phosphate	DoD-ELAP,NELAP
Dibutyl Phenyl Phosphate	DoD-ELAP,NELAP
Dibutyl Phenyl Phosphate	WADOE,DoD-ELAP,NELAP
Tributyl Phosphate	WADOE,DoD-ELAP,NELAP
Tributyl Phosphate	DoD-ELAP,NELAP
Butylated Hydroxytoluene	WADOE,DoD-ELAP,NELAP
Butylated Hydroxytoluene	DoD-ELAP,NELAP
Azobenzene (1,2-DP-Hydrazine)	DoD-ELAP,NELAP
Azobenzene (1,2-DP-Hydrazine)	WADOE,DoD-ELAP,NELAP
Tetrachloroguaiacol	WADOE,DoD-ELAP
Tetrachloroguaiacol	DoD-ELAP
3,4,5-Trichloroguaiacol	
3,4,5-Trichloroguaiacol	WADOE
3,4,6-Trichloroguaiacol	WADOE
3,4,6-Trichloroguaiacol	
4,5,6-Trichloroguaiacol	
4,5,6-Trichloroguaiacol	WADOE
Guaiacol	
Guaiacol	WADOE
1,2,4,5-Tetrachlorobenzene	WADOE,DoD-ELAP,NELAP
1,2,4,5-Tetrachlorobenzene	DoD-ELAP,NELAP

NWTPH-Dx in Water

Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP
Diesel Range Organics (C12-C22)	DoD-ELAP
Diesel Range Organics (C12-C22)	DoD-ELAP
Diesel Range Organics (C12-C25)	DoD-ELAP
Diesel Range Organics (C12-C25)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP



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Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP
Residual Range Organics (C23-C32)	DoD-ELAP
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-Nap)	DoD-ELAP
Gasoline Range Organics (2MP-TMB)	DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C6-C10)	ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C5-C12)	DoD-ELAP

SM 2540 F-97 in Water



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Project: Boeing Renton Apron R
Project Number: Boeing Renton Apron A
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Settleable Solids
Settleable Solids

DoD-ELAP,WADOE,NELAP
DoD-ELAP,NELAP

SM 4500-H+ B-00 in Water

pH
pH

WADOE,NELAP
NELAP,WA-DW

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022



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Reported:
02-Jul-2021 14:20

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
M	Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

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Suite C
Kirkland, WA 98034
(425) 885-1664
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ANALYSIS REPORT

Analytical Resources Inc.
4611 S 134th Pl
Tukwila, WA 98168
Attention: KELLY BOTTEM
PO Number: 21F0324
All results reported on an as received basis.

Date Received: 06/22/21
Date Reported: 7/ 2/21

AMTEST Identification Number 21-A008615
Client Identification 21F0324-01
Sampling Date 06/21/21, 12:25

ICP/MS Metals 200.8

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Arsenic	2.89	ug/L		0.05	EPA 200.8	JDR	07/01/21
Barium	178.	ug/L		0.3	EPA 200.8	JDR	07/01/21
Cadmium	1.15	ug/L		0.05	EPA 200.8	JDR	07/01/21
Chromium	23.2	ug/L		0.5	EPA 200.8	JDR	07/01/21
Lead	15.7	ug/L		0.1	EPA 200.8	JDR	07/01/21
Selenium	< 0.5	ug/L		0.5	EPA 200.8	JDR	07/01/21
Silver	< 0.1	ug/L		0.1	EPA 200.8	JDR	07/01/21

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Mercury	0.00067	mg/l		0.0001	EPA 7471B	AY	06/23/21

Analytical Resources Inc.
Project Name:
AmTest ID: 21-A008616

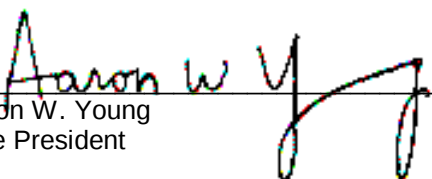
AMTEST Identification Number 21-A008616
Client Identification 21F0324-02
Sampling Date 06/21/21, 13:10

ICP/MS Metals 200.8

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Arsenic	3.07	ug/L		0.05	EPA 200.8	JDR	07/01/21
Barium	13.2	ug/L		0.3	EPA 200.8	JDR	07/01/21
Cadmium	0.091	ug/L		0.05	EPA 200.8	JDR	07/01/21
Chromium	1.20	ug/L		0.5	EPA 200.8	JDR	07/01/21
Lead	1.36	ug/L		0.1	EPA 200.8	JDR	07/01/21
Selenium	1.79	ug/L		0.5	EPA 200.8	JDR	07/01/21
Silver	< 0.1	ug/L		0.1	EPA 200.8	JDR	07/01/21

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Mercury	0.00014	mg/l		0.0001	EPA 7471B	AY	06/23/21


Aaron W. Young
Vice President

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(425) 885-1664
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ANALYSIS REPORT

Analytical Resources Inc.
4611 S 134th Pl
Tukwila, WA 98168
Attention: KELLY BOTTEM
All results reported on an as received basis.

Date Received: 06/22/21
Date Reported: 7/ 2/21

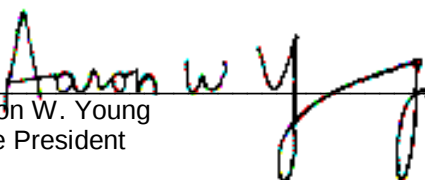
AMTEST Identification Number 21-A008617
Client Identification 21F0324-03
Sampling Date 06/22/21, 13:45

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	JDR	06/29/21
Silver	0.0358	ug/g		0.0001	SW-846 6020B	JDR	06/29/21
Arsenic	4.48	ug/g		0.001	SW-846 6020B	JDR	06/29/21
Barium	69.5	ug/g		0.0003	SW-846 6020B	JDR	06/29/21
Cadmium	0.516	ug/g		0.0005	SW-846 6020B	JDR	06/29/21
Chromium	25.3	ug/g		0.001	SW-846 6020B	JDR	06/29/21
Lead	15.96	ug/g		0.0002	SW-846 6020B	JDR	06/29/21
Selenium	0.568	ug/g		0.001	SW-846 6020B	JDR	06/29/21

Mercury cold vapor

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Mercury	0.0666	ug/g		0.0100	SW-846 7471B	AY	06/23/21


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QC Summary for sample numbers: 21-A008615 to 21-A008616

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
21-A008616	Mercury	mg/l	0.00014	0.00014	0.00

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
21-A008616	Mercury	mg/l	0.00014	0.00270	0.00250	102.40 %

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Mercury	mg/l	0.0250	0.0269	108. %
Silver	ug/L	25.0	22.6	90.4 %
Arsenic	ug/L	25.0	24.4	97.6 %
Barium	ug/L	25.0	23.5	94.0 %
Cadmium	ug/L	25.0	24.5	98.0 %
Chromium	ug/L	25.0	25.6	102. %
Lead	ug/L	25.0	22.9	91.6 %
Selenium	ug/L	125.	117.	93.6 %

BLANKS

ANALYTE	UNITS	RESULT
Mercury	mg/l	< 0.0001
Silver	ug/L	< 0.1
Arsenic	ug/L	< 0.1
Barium	ug/L	< 0.3
Cadmium	ug/L	< 0.05
Chromium	ug/L	< 0.5
Lead	ug/L	< 0.1
Selenium	ug/L	< 0.5

QC Summary for sample number: 21-A008617

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
21-A008622	Mercury	ug/g	0.0430	0.0489	13.
21-A008629	Mercury	ug/g	0.0117	0.0107	8.9

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
21-A008622	Mercury	ug/g	0.0430	0.130	0.0970	89.69 %
21-A008629	Mercury	ug/g	0.0117	0.0733	0.0905	68.07 %
21-A008617	Silver	ug/g	0.0358	3.37	3.30	101.04 %
21-A008617	Silver	ug/g	0.0358	3.27	3.30	98.01 %
21-A008617	Arsenic	ug/g	4.48	7.81	3.30	100.91 %
21-A008617	Arsenic	ug/g	4.48	7.54	3.30	92.73 %
21-A008617	Cadmium	ug/g	0.516	3.50	3.30	90.42 %
21-A008617	Cadmium	ug/g	0.516	3.41	3.30	87.70 %
21-A008617	Chromium	ug/g	25.3	30.0	3.30	142.42 %
21-A008617	Chromium	ug/g	25.3	28.9	3.30	109.09 %
21-A008617	Lead	ug/g	15.96	20.56	3.300	139.39 %
21-A008617	Lead	ug/g	15.96	20.92	3.300	150.30 %
21-A008617	Selenium	ug/g	0.568	3.62	3.30	92.48 %
21-A008617	Selenium	ug/g	0.568	3.47	3.30	87.94 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Silver	ug/g	3.37	3.27	3.0
Spike	Arsenic	ug/g	7.81	7.54	3.5
Spike	Cadmium	ug/g	3.50	3.41	2.6
Spike	Chromium	ug/g	30.0	28.9	3.7
Spike	Lead	ug/g	20.56	20.92	1.7
Spike	Selenium	ug/g	3.62	3.47	4.2

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Mercury	ug/g	0.0250	0.0238	95.2 %
Mercury	ug/g	0.0250	0.0271	108. %
Silver	ug/g	25.0	25.2	101. %
Arsenic	ug/g	25.0	24.5	98.0 %
Cadmium	ug/g	25.0	25.2	101. %
Chromium	ug/g	25.0	24.3	97.2 %
Selenium	ug/g	125.	116.	92.8 %

QC Summary for sample number: 21-A008617...

BLANKS

ANALYTE	UNITS	RESULT
Mercury	ug/g	< 0.01
Mercury	ug/g	< 0.01
Silver	ug/g	< 0.0001
Arsenic	ug/g	< 0.001
Cadmium	ug/g	< 0.0005
Chromium	ug/g	< 0.001
Selenium	ug/g	< 0.001

Attachment 2 – Other Historical Photos and Maps in the Area and Other Information



Photo 1. Aerial photo from 1936 of the area, this pre-dates Boeing and is all as farmland. Important structures in the photo are the Shuffleton power plant with the associated fueling dock and two large oil tanks.



Photo 2. Aerial photo from approximately 1960 of the area containing a portion of the current Boeing Renton Facility. Important structures in the photo include the presence of the fueling dock (bottom left) and two large oil tanks for Shuffleton power plant, with associated pump house and containment berms. The pipelines are above ground by the tanks as they bend over the berms and 2 fuel lines appear to be above ground to the fueling dock. Some type of structure exists on land at end of the fueling dock and is included on 1967 drawings. This 1960 aerial photo is before Boeing Buildings 4-81/82 and Apron R were constructed in 1967.

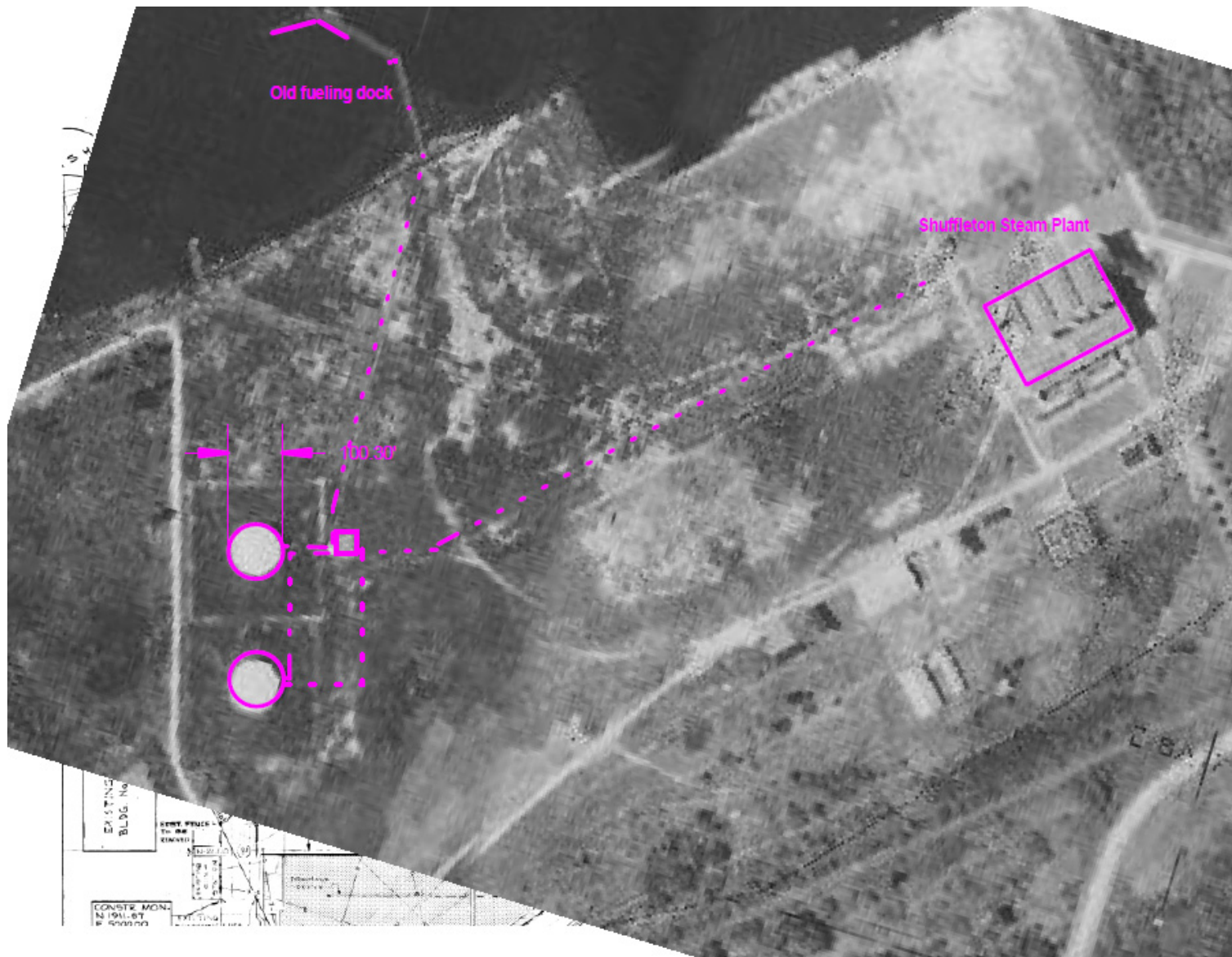


Photo 4. 1967 details from Boeing Construction drawing of Building 4-81/82 with overlay on the 1936 aerial photo of the Shuffleton Power plant and associated infrastructure, highlighted in purple.

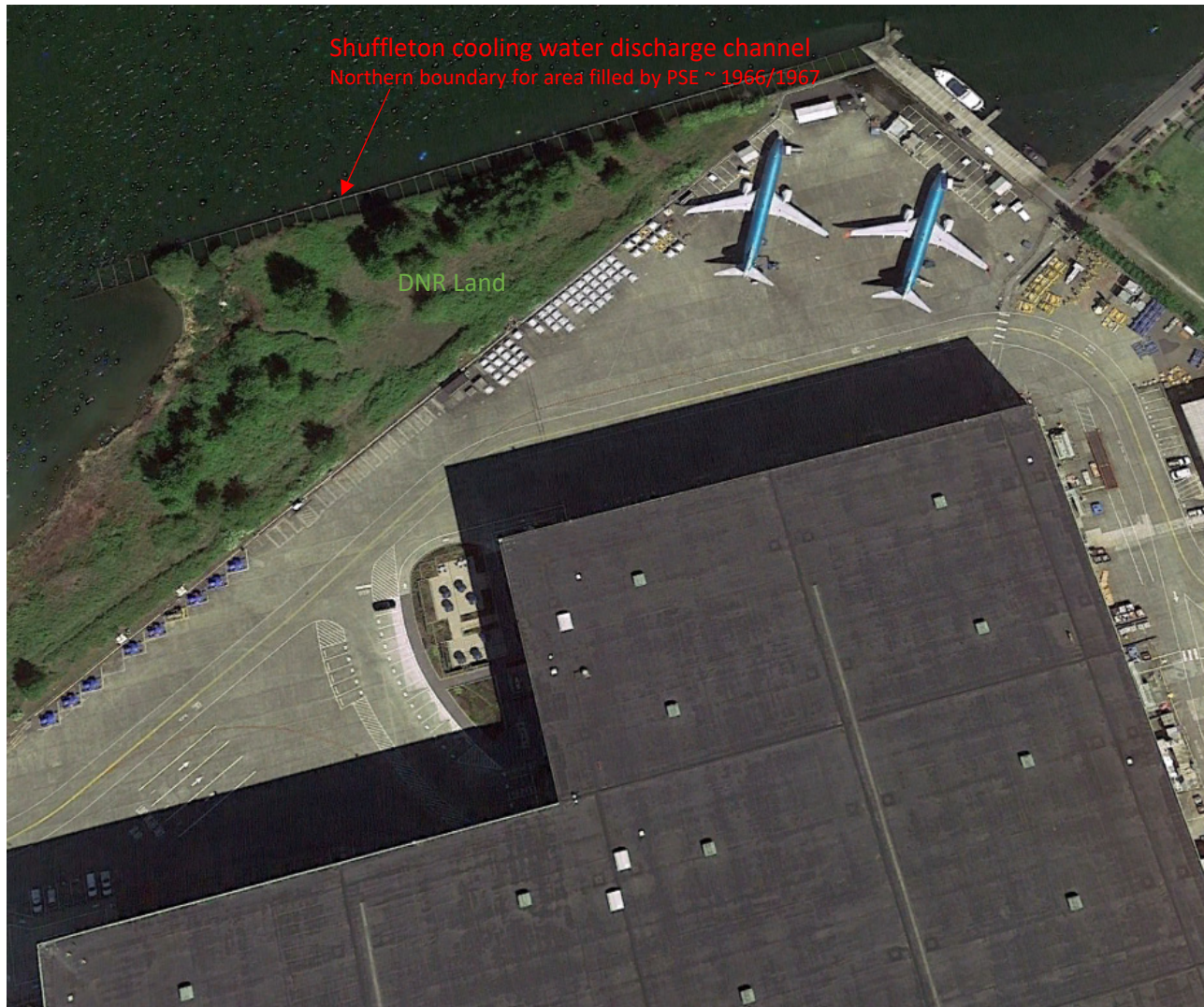


Photo 5. 2013 Aerial photo of Apron R and Building 4-81/82. The Shuffleton cooling water discharge canal is visible in the image. The prior cooling water discharge canal is important as its construction was part of the dismantling of the fueling dock and filling the DNR lease land in 1967 (completed by PSE).



Photo 6. 2014 Aerial photo of Apron R and Building 4-81/82. The storm drain outfall is visible during the removal of the cooling water discharge channel from the Shuffleton Power plant (this work was completed by others at the start of the Southport redevelopment)



Photo 7. 2015 Aerial photo of Apron R and Building 4-81/82. With a visible excavation line in the DNR lease parcel (leased to PSE) where the storm water drain has been buried. The location of the storm water lines to outfall would have crossed path with any historical lines from the prior Shuffleton refueling dock.

DEPARTMENT OF ECOLOGY
Toxics Cleanup Program

Memorandum

March 12, 2018

TO: TCP Files for PSE Shuffleton Steam Plant, Shuffleton Substation, and DNR Lease Area

FROM: Donna Musa, Toxics Cleanup Program, Northwest Regional Office

SUBJECT: Recommendation for Site and File Reorganization

Ecology's Integrated Site Information System (ISIS) database indicates only one "site" for the multiple parcel property known as PSE Shuffleton Substation. After a review of the site files (see attached PSE Shuffleton Summary: Site History), it has been determined that there are three separate areas of contamination, not one, as previously reflected in ISIS and Ecology site files.

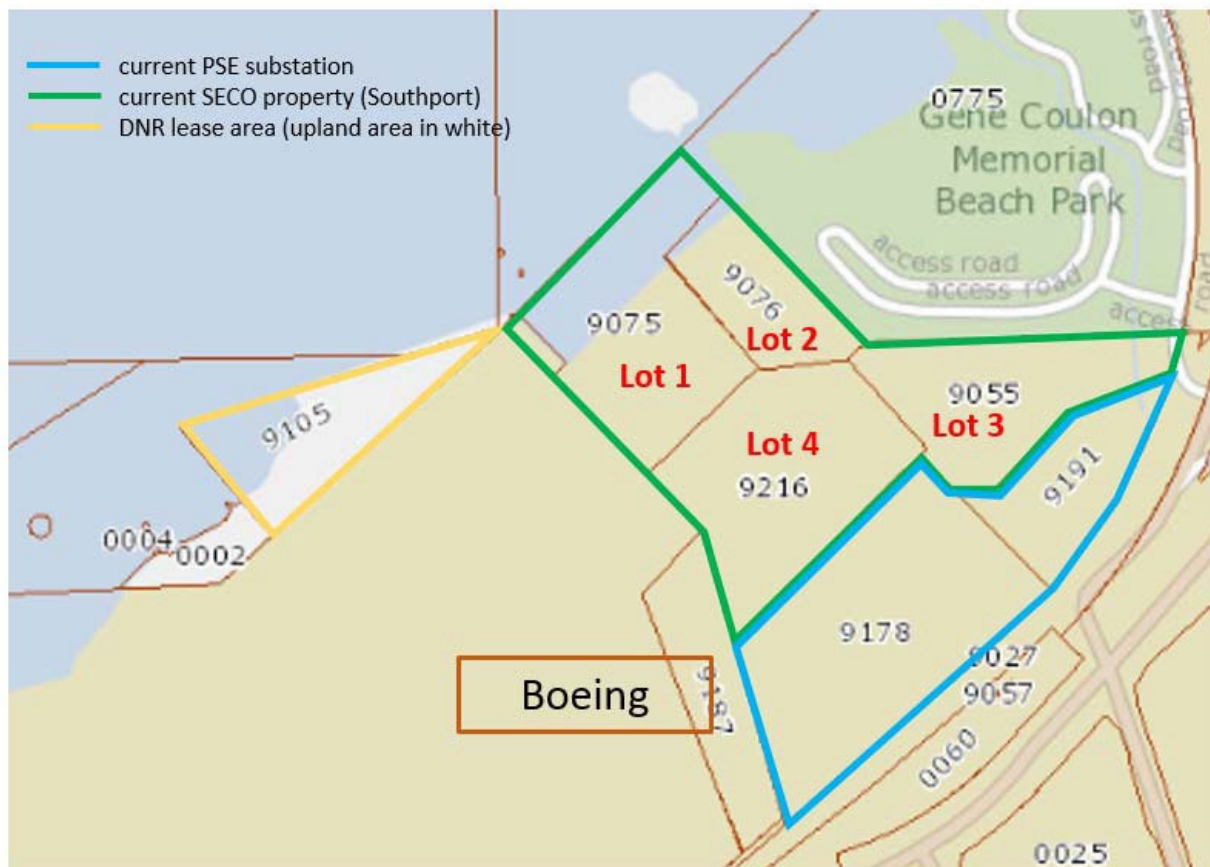
Ecology will be updating the ISIS database and site files to reflect the following:

- 1) PSE Shuffleton Substation
Also known as: PSE Shuffleton Complex, Puget Sound Power & Light
Address: 1095 Lake Washington Blvd N, Renton
Parcels: 0823059178, 0823059191
Facility Site ID: 14655
Cleanup Site ID: 6716
UST ID: 8530
Historic LUST Release ID: 301394
Site Status: Cleanup Started
- 2) PSE Shuffleton Steam Plant
Also known as: PSE Shuffleton Complex, Southport, SECO
Address: 1101 Lake Washington Blvd N, Renton
Parcels: 0523059075, 0523059076, 0823059055, 0823059216
Facility Site ID: 82611157
Cleanup Site ID: 14483
Unit 1: Lots 1-3, NW0149, NFA on 9/20/99
Unit 2: Lot 4, NW0461, NFA on 12/23/00
Site Status: No Further Action
- 3) PSE Shuffleton DNR Lease Area
Address: N/A
Parcel: 0723059105
Facility Site ID: 82611157
Cleanup Site ID: 14484
Site Status: No Further Action (6/26/00)

SITE HISTORY

The Puget Sound Energy Shuffleton site housed two main facilities: a steam plant on the northern portion of the site and a substation on the southern portion of the site. The steam plant portion of the property also contained other associated buildings, including a pump house, analytical laboratory, and storage buildings. The steam plant was functional daily until the mid-1950s, and remained functional in a standby status until 1989. The steam plant and associated buildings were demolished in the mid-1990s, at which point remediation of this portion of the site began prior to sale of the property. The substation portion of the site remains a functioning PSE property to the present.

The former steam plant portion of the property was divided into four regions, referred to as Lots 1-4. These regions correspond to current parcel numbers 0523059075, 0523059076, 0823059055, and 0823059216. The current Shuffleton substation property includes parcel numbers 0823059178 and 0823059191. A DNR lease area along Lake Washington was historically held by PSE. The DNR area primarily borders the Boeing property to the west of the site, and is approximately designated by current parcel 0723059105. Lots 1-4 were sold to SECO Development in 1999. Current property boundaries are indicated in the figure below.



CLEANUP ACTIVITIES PRIOR TO NFA LETTERS

The upland site first entered VCP in 1998 (VCP # NW0149). Multiple meetings are documented as being attended by PSE, consulting, and Ecology staff to discuss cleanup while remedial actions were being performed. The focus of the cleanup was Lots 1-4, and not the section of the property that was to remain PSE property. Chemicals of concern in this area included TPH, PAH, PCB, arsenic, and lead in soil, with areas of contamination located near areas of former plant activity. Groundwater was also characterized during remedial activities, and the only chemical present at elevated concentrations was arsenic. Based on information from other sites in the area, this was attributed to high natural background concentrations of arsenic in the region and not attributed to site activities.

Primary remediation activities were completed in 1999 (VCP # NW0149). Following this, an NFA letter was issued by Ecology on September 20, 1999 for soil and groundwater on Lots 1, 2, and 3. One remaining area of petroleum contaminated soil remained on Lot 4, and it was decided that this area would be addressed during construction activities when the soil would be accessible. Remediation was completed on Lot 4 in 2000 (VCP # NW0461), and an NFA letter for Lot 4 soil was issued on December 23, 2000. Groundwater conditions on Lot 4 had not been reported to differ from Lots 1-3, so it is unclear why different media were included in the two NFA letters.

The portion of the site to be retained by PSE was not well characterized during remedial activities. One soil sampling area on Lot 3 (EZ-11) extended across boundaries into the substation property. Soil on the SECO property were cleaned up, and contaminated soil on the PSE property were left in place due to difficulties in accessibility. Multiple reports were submitted documenting the removal of USTs near the former pump island, including LUST #3865 (UST #8530), and the cleanup of contaminated soil in this area. The DNR lease area was addressed separately from the steam plant and substation property. In 1966-1967, while they held the DNR lease, PSE created the upland portion of the lease area with dredged Lake Washington fill, and were therefore responsible for cleaning up any contamination prior to ending their lease. An NFA letter for the upland portion of the DNR lease area was issued on June 26, 2000.

CLEANUP ACTIVITIES SINCE NFA LETTERS

The only cleanup activity reported to Ecology on Lots 1-4 since 2000 was the discovery and cleanup of a small area of Bunker C fuel oil contaminated soil. This was discovered on Lot 4 during construction activities in 2001 and removed. On the PSE substation, multiple remediated spills have been reported. Details on these spills are in the table below.

<u>DATE OF REPORT</u>	<u>TYPE OF SPILL</u>	<u>ERTS#</u>
October 2001	mineral oil	520270
February 2002	mineral oil	
March 2002	mineral oil	525102
May 2007	mineral oil	
January 2014	mineral oil	645655
April 2014	diesel	647602
October 2014	mineral oil	651666
November 2016	mineral oil	665783
April 2017	mineral oil	670760

CURRENT QUERY REGARDING NFA FOR LOTS 1-4

On December 20, 2017, FloydSnider submitted a letter to Ecology on behalf of SECO Development inquiring about a change in site status from NFA to Cleanup Started. They believe that this change in designation was related to a mineral oil spill reported on the PSE substation property in February 2017. This spill was designated NFA during the Initial Investigation. For this spill, a new site ID (CSID 14410) was created for the substation property; all cleanup activities from both the SECO property and the substation prior to this had been recorded in the original PSE Shuffleton cleanup site (CSID 6716). They inquired both about reestablishing the NFA for the site, and the possibility of splitting the sites to designate incidents on SECO property from those on the PSE substation property.

From notes from meetings attended by Ecology and PSE as part of the VCP cleanup process, it appears that separation of the sites was considered before cleanup began. To expedite cleanup, it was decided to leave it as one site with the option to separate the sites at a later date. Historically, there has been a clear difference in the level of cleanup activities on the SECO vs substation properties. Contamination on the SECO property has, to date, all been attributable to historic PSE contamination. In contrast, the substation property is still active and has reported a number of spills and cleanups that are unrelated to activities on the SECO property. Current tax parcel boundaries capture the designation between the two sites well, and would provide a good basis for site delineation.