Soil Sampling for Pesticides, VOCs, PAHs, and Metals in Selected Cannabis Farms in Okanogan County

Soil Sampling Selected Cannabis Farms in Brewster

Toxics Cleanup Program

Washington State Department of Ecology
Union Gap, Washington

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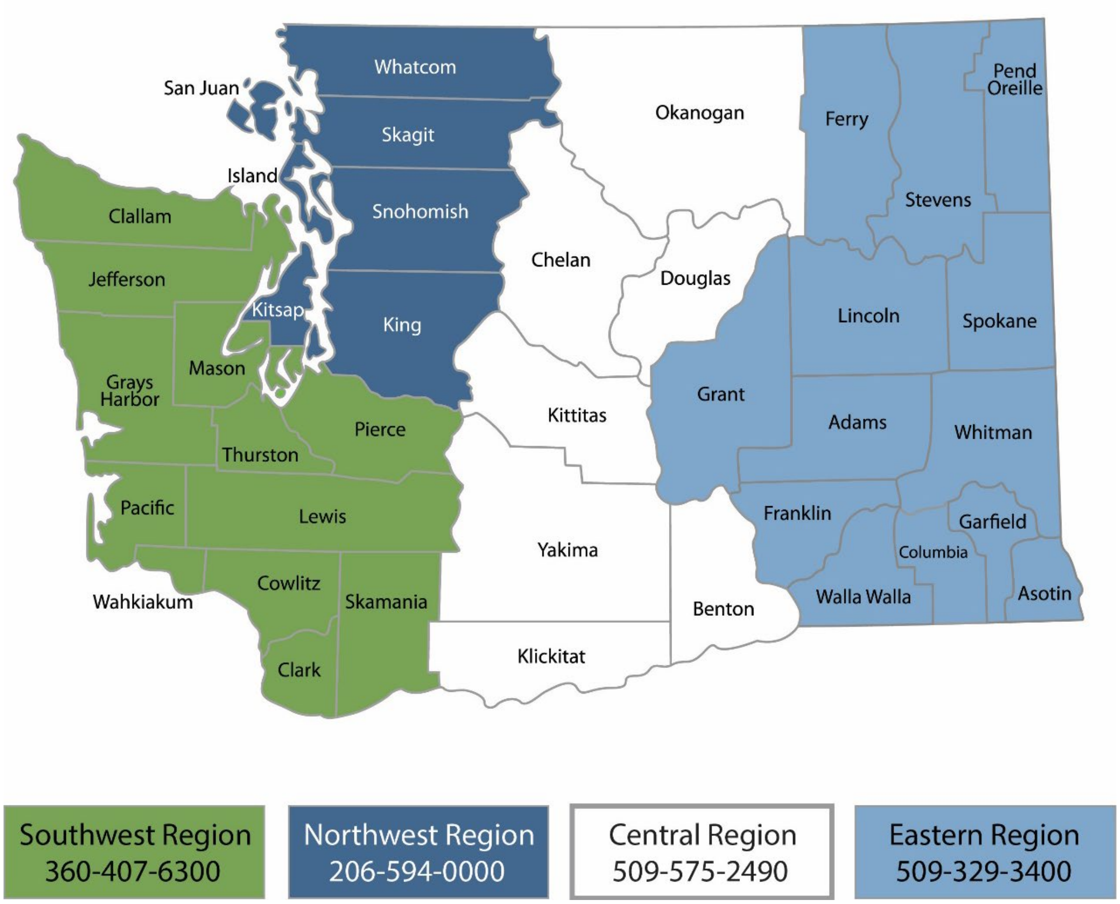

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DEPARTMENT OF
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State of Washington

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Background

The Washington State Liquor and Cannabis Board (LCB) requested the Department of Ecology (Ecology) perform soil sampling at specific cannabis farms. Eighteen producers in Okanogan County were selected for sampling. All eighteen producers were growing cannabis crops for retail sale.

The LCB requested Ecology's sampling given that their own testing indicated product contamination specific to an area within Okanogan County. Cannabis products from this area showed detectable levels of dichloro-diphenyl-dichloroethylene (DDE), and many exceeded the LCB's pesticide action levels. DDE is a remnant product of dichloro-diphenyl-trichloroethane (DDT). DDT was used as a common pesticide, but in 1972 the Environmental Protection Agency (EPA) issued a cancellation order for DDT based on its adverse environmental effects, such as those to wildlife, as well as its potential human health risks (USEPA, 2023). As a result, Ecology conducted soil sampling with the purpose of determining:

1. If there is contamination in the soil; and
2. If so, what specific contaminants exist, and at what concentrations.

As a result, Ecology sampled and analyzed soil from specific locations designated by the LCB for the following contaminant classes:

1. **Pesticides (including polychlorinated biphenyls [PCBs]):**
    a. Extracted following a modification of Method SW3541.
    b. Cleaned up following a modification of Methods SW3620C, SW3660B, and SW3665A.
    c. Analyzed following a modification of Method SW8081B and 8082A.
2. **Volatile organic compounds (VOCs):**
    a. Extracted following a modification of Method SW5030B.
    b. Analyzed following a modification of Method SW8260D.
3. **Polycyclic aromatic hydrocarbons (PAHs):**
    a. Extracted following a modification of Method SW3541.
    b. Analyzed following a modification of Method SW8270E.
4. **Metals:**
    a. Extracted following a modification of Method SW3050B.
    b. Analyzed following a modification of Method SW6020B.
5. **Percent Solids:**
    a. Analyzed following a modification of Method SM2540G.

Soil Sampling

Soil sampling was conducted on April 11, 2023. Ecology followed protocols outlined in *Field Sampling and Analysis Project Plan (SAPP): Soil Sampling for Pesticides, VOCs, PAHs, and Metals in Selected Agricultural Fields in Okanogan County* (Ecology, 2023a). Please see Appendix A for more information.

Chain of Custody

Soil samples were immediately placed on ice and delivered to the Washington State Department of Ecology, Manchester Environmental Laboratory on April 12, 2023. The Chain of Custody can be found in Appendix B: Washington State Department of Ecology, Manchester Environmental Laboratory – Chain of Custody.

Specific Analytics Results Summary

Pesticides (Including Polychlorinated Biphenyls)

The following pesticides (including polychlorinated biphenyls) were analyzed following a modification of Method SW8081B and 8082A (see Table 1). The laboratory results can be found in Appendix C: PEST2PCB Analytical Results.

Table 1: Pesticides and PCBs Analyzed.

CAS #	Analyte
72-54-8	4,4'-DDD
72-55-9	4,4'-DDE
50-29-3	4,4'-DDT
309-00-2	Aldrin
319-84-6	Alpha-BHC
12789-03-6	Chlordane, technical
5103-71-9	Cis-Chlordane
5103-73-1	Cis-Nonachlor
58-89-9	Gamma-BHC
76-44-8	Heptachlor
27304-13-8	Oxychlordane
12674-11-2	PCB-aroclor-1016
11104-28-2	PCB-aroclor-1221
11141-16-5	PCB-aroclor-1232
53469-21-9	PCB-aroclor-1242
12672-29-6	PCB-aroclor-1248
11097-69-1	PCB-aroclor-1254
11096-82-5	PCB-aroclor-1260
37324-23-5	PCB-aroclor-1262

11100-14-4	PCB-aroclor-1268
8001-35-2	Toxaphene
5103-74-2	Trans-Chlordane
319-85-7	Beta-BHC
319-86-8	Delta-BHC
60-57-1	Dieldrin
959-98-8	Endosulfan I
33213-65-9	Endosulfan II
1031-07-8	Endosulfan Sulfate
72-20-8	Endrin
7421-93-4	Endrin Aldehyde
53494-70-5	Endrin Ketone
1024-57-3	Heptachlor Epoxide
72-43-5	Methoxychlor

The following contaminants were detected in the soil, with the highest recorded value referenced against Ecology's Cleanup Levels and Risk Calculation (CLARC) listed protective values based on Direct Contact (lowest of Noncancer vs. Cancer) and soil value determined to be protective of groundwater (based on vadose zone) (see Table 2). CLARC can be found at Cleanup Levels and Risk Calculation (CLARC).[2]

Table 2: Pesticides and PCBs Detected.

CAS #	**Analyte**	**Highest Detected Value (mg/kg)**	**Ecology Listed Protective Value (based on soil direct contact) (mg/kg)**	**Ecology Listed Protective Value (based on soil protective of groundwater) (mg/kg)**	**Final Protective Concentration (mg/kg)**
72-54-8	4,4'-DDD	0.066	4.2	0.34	0.34
72-55-9	**4,4'-DDE**	**20.5**	**2.9**	**0.22**	**0.22**
50-29-3	**4,4'-DDT**	**5.8**	**2.9**	**3.5**	**2.9**
60-57-1	**Dieldrin**	**0.038**	**0.063**	**0.0028**	**0.0028**
72-20-8	Endrin	0.012	24	0.44	0.44
319-85-7	Beta-BHC	0.00053	0.56	0.0023	0.0023
33213-65-9[1]	Endosulfan II	0.00096	-	-	-
53494-70-5[1]	Endrin Ketone	0.0096	-	-	-
959-98-8[1]	Endosulfan I	0.00052	-	-	-
58-89-9	Gamma-BHC	0.00013	0.91	0.0062	0.0062

[2] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

Note: Bolded text indicates contaminant exceed one or more Ecology Listed Protective Value.

1 – CLARC does not list a Protective Value for Soil Direct Contact or Soil Protective of Groundwater.

Summary:

4,4’-DDE and 4,4’ DDT exceeded determined protective values for soil direct contact.

Dieldrin, 4,4’-DDT, and 4,4’-DDE, exceeded values for soil determined protective of groundwater.

Volatile Organics Analysis

The following volatile organics were analyzed following a modification of SW8260D (see Table 3). The results can be found in Appendix D: VOA Analytical Results.

Table 3: VOAs Analyzed.

CAS #	Analyte
630-20-6	1,1,1,2-Tetrachloroethane
71-55-6	1,1,1-Trichloroethane
79-34-5	1,1,2,2-Tetrachloroethane
79-00-5	1,1,2-Trichloroethane
76-13-1	1,1,2-Trichlorotrifluoroethane
75-34-3	1,1-Dichloroethane
75-35-4	1,1-Dichloroethene
563-58-6	1,1-Dichloropropene
87-61-6	1,2,3-Trichlorobenzene
96-18-4	1,2,3-Trichloropropane
120-82-1	1,2,4-Trichlorobenzene
95-63-6	1,2,4-Trimethylbenzene
96-12-8	1,2-Dibromo-3-Chloropropane
106-93-4	1,2-Dibromoethane
95-50-1	1,2-Dichlorobenzene
107-06-2	1,2-Dichloroethane
78-87-5	1,2-Dichloropropane
108-67-8	1,3,5-Trimethylbenzene
541-73-1	1,3-Dichlorobenzene
142-28-9	1,3-Dichloropropane
106-46-7	1,4-Dichlorobenzene
594-20-7	2,2-Dichloropropane
78-93-3	2-Butanone
95-49-8	2-Chlorotoluene
591-78-6	2-Hexanone
106-43-4	4-Chlorotoluene
108-10-1	4-Methyl-2-pentanone

67-64-1	Acetone
71-43-2	Benzene
108-86-1	Bromobenzene
74-97-5	Bromodichloromethane
75-25-2	Bromoform
74-83-9	Bromomethane
75-15-0	Carbon Disulfide
56-23-5	Carbon Tetrachloride
108-90-7	Chlorobenzene
75-00-3	Chloroethane
67-66-3	Chloroform
74-87-3	Chloromethane
156-59-2	Cis-1,2-Dichloroethene
10061-01-5	Cis-1,3-Dichloropropene
124-48-1	Dibromochloromethane
74-95-3	Dibromomethane
75-71-8	Dichlorodifluoromethane
60-29-7	Ethyl Ether
100-41-4	Ethylbenzene
87-68-3	Hexachlorobutadiene
67-72-1	Hexachloroethane
98-82-8	Isopropylbenzene (Cumene)
179601-23-1	m,p-Xylene
74-88-4	Methyl Iodide
1634-04-4	Methyl t-butyl ether
75-09-2	Methylene Chloride
91-20-3	Naphthalene
104-51-8	n-Butylbenzene
103-65-1	n-Propylbenzene
95-47-6	o-Xylene
76-01-7	Pentachloroethane
99-87-6	p-Isopropyltoluene
135-98-8	Sec-Butylbenzene
100-42-5	Styrene
98-06-6	Tert-Butylbenzene
127-18-14	Tetrachloroethene
109-99-9	Tetrahydrofuran
108-88-3	Toluene
156-60-5	Trans-1,2-Dichloroethene
10061-02-6	Trans-1,3-Dichloropropene
110-57-6	Trans-1,4-Dichloro-2-butene
79-01-6	Trichloroethene

75-69-4	Trichlorofluoromethane
75-01-4	Vinyl Chloride

The following contaminants were detected in the soil, with the highest recorded value referenced against Ecology's Cleanup Levels and Risk Calculation (CLARC) listed protective values based on Direct Contact (lowest of Noncancer vs. Cancer) and soil value determined to be protective of groundwater (based on vadose zone) (see Table 4). CLARC can be found at Cleanup Levels and Risk Calculation (CLARC).[3]

Table 4: VOAs Detected.

CAS #	Analyte	Highest Detected Value (mg/kg)	Ecology Listed Protective Value (based on direct contact) (mg/kg)	Ecology Listed Protective Value (based on protection of groundwater) (mg/kg)	Final Protective Concentration (mg/kg)
75-09-2	Methylene Chloride	0.00149	94	0.022	0.022

Summary:

No contaminants exceeded determined protective values for direct contact, or for soil determined to be protective of groundwater.

Polyaromatic Hydrocarbons (PAHs)

The following PAHs were analyzed following a modification of SW8270E (see Table 5). The results can be found in Appendix E: PAH Analytical Results.

Table 5: PAH's Analyzed.

CAS #	Analyte
90-12-0	1-Methylnaphthalene
91-58-7	2-Chloronaphthalene
91-57-6	2-Methylnaphthalene
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
120-12-7	Anthracene
56-55-3	Benz[a]anthracene
50-32-8	Benzo(a)pyrene
205-99-2	Benzo(b)fluoranthene

[3] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

191-24-2	Benzo(ghi)perylene
207-08-9	Benzo(k)fluoranthene
86-74-8	Carbazole
218-01-9	Chrysene
53-70-3	Dibenzo(a,h)anthracene
132-64-9	Dibenzofuran
206-44-0	Fluoranthene
86-73-7	Fluorene
193-39-5	Indeno(1,2,3-cd)pyrene
91-20-3	Naphthalene
85-01-8	Phenanthrene
129-00-0	Pyrene
483-65-8	Retene

The following contaminants were detected in the soil, with the highest recorded value referenced against Ecology's Cleanup Levels and Risk Calculation (CLARC) listed protective values based on Direct Contact (lowest of Noncancer vs. Cancer) and soil value determined to be protective of groundwater (based on vadose zone) (see Table 6). CLARC can be found at Cleanup Levels and Risk Calculation (CLARC).[4]

Table 6: PAHs Detected.

CAS #	Analyte	Highest Detected Value (mg/kg)	Ecology Listed Protective Value (based on direct contact) (mg/kg)	Ecology Listed Protective Value (based on protection of groundwater) (mg/kg)	Final Protective Concentration (mg/kg)
206-44-0	Fluoranthene	0.0071	3200	630	630
129-00-0	Pyrene	0.0044	2400	330	330
483-65-8[1]	Retene	0.0088	-	-	-
86-74-8[1]	Carbazole	0.0071	-	-	-

1 – CLARC does not list a Protective Value for Soil Direct Contact or Soil Protective of Groundwater.

Summary:

No contaminants exceeded determined protective values for direct contact, or for soil determined to be protective of groundwater.

[4] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

Metals

The following Metals were analyzed following a modification of SW6020B (see Table 7). The results can be found in Appendix F: Metals Analytical Results.

Table 7: Metals Analyzed.

CAS #	Analyte
7440-22-4	Silver
7440-38-2	Arsenic
7440-39-3	Barium
7440-43-9	Cadmium
16065-83-1	Chromium
7439-92-1	Lead
7782-49-2	Selenium

The following contaminants were detected in the soil, with the highest recorded value referenced against Ecology's Cleanup Levels and Risk Calculation (CLARC) listed protective values based on Direct Contact (lowest of Noncancer vs. Cancer) and soil value determined to be protective of groundwater (based on vadose zone) (see Table 8). CLARC can be found at Cleanup Levels and Risk Calculation (CLARC).[5]

Table 8: Metals Detected.

CAS #	Analyte	Highest Detected Value (mg/kg)	Ecology Listed Protective Value (based on direct contact) (mg/kg)	Ecology Listed Protective Value (based on protection of groundwater) (mg/kg)	Final Protective Concentration (mg/kg)
7440-22-4	Silver	0.068	400	14	14
7440-38-2	**Arsenic**	**96.4**	**0.67**	**2.9**	**20**[1]
7440-39-3	Barium	149	16000	1600	1600
7440-43-9	Cadmium	0.392	80	0.69	0.69
16065-83-1	Chromium	21.2	1200000	4800000	120000
7439-92-1	**Lead**	**956**	**250**	**3000**	**250**
7782-49-2	Selenium	0.219	400	5.2	5.2

*Note: Bolded text indicates contaminant exceed one or more Ecology Listed Protective Value.

1 – Cleanup level based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil (Ecology, 2013).

[5] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

Summary:

Arsenic and Lead exceeded determined protective values for direct contact.

Arsenic and Lead exceeded the soil value determined to be protective of groundwater.

Percent Solids

In addition, percent solids were analyzed following a modification of SM2540G. The results can be found in Appendix G: Percent Solids Analytical Results.

Analytics Summary

The following results summarize sampling and laboratory analytics for the investigation on this project:

- The following contaminants were found to exceed Method B (Direct Contact) for soil:
  - 4,4'-DDE
  - 4,4'-DDT
  - Arsenic
  - Lead

- The following contaminants were found to exceed Method B (Soil Protective of Groundwater -Vadose Zone):
  - Beta-BHC
  - Dieldrin
  - 4,4'-DDT
  - 4,4'-DDE
  - Arsenic
  - Lead

Table 9 displays the soil concentrations, by location, of arsenic, lead, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin. In the area of the cannabis farms where soil was tested, it is likely that arsenic, lead, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT are present and widespread due to historic pesticide application. It cannot be assumed that an entire farm is free of contamination even though soil samples may indicate contaminant concentrations below Ecology Final Protective Concentration levels. These results are from a limited preliminary investigation, and further characterization is necessary to determine the full extent of contamination in the area.

Table 9: Soil concentrations by location of Arsenic, Lead, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and Dieldrin.

	Arsenic	Lead	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin
Ecology Listed Protective Value (based on soil direct contact) (mg/kg)	0.67	250	4.2	2.9	2.9	0.063
Ecology Listed Protective Value (based on soil protective of groundwater) (mg/kg)	2.9	3000	0.34	0.22	3.5	0.0028
Final Protective Concentration (mg/kg)	20*	250	0.34	0.22	2.9	0.0028

		Concentration in Soil (mg/kg)					
Location	Sample ID	Arsenic	Lead	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin
Argo Technic	AT-SA1	**96.4**	**956**	0.0088	**3.90**	0.847	0.00162U
Argo Technic	AT-SA2	**74.2**	**774**	0.0051	**2.47**	0.382	0.00164U
Beausoleil	B-SA1	4.7	7	0.0007	0.01	0.005	0.00152U
Beausoleil	B-SA2	4.4	7	0.0004	0.01	0.007	0.00158U
Bodie Mine	BM-SA1	5.6	5	0.0015	0.12	0.037	0.00141U
Bodie Mine	BM-SA2	8.3	8	0.0025	0.18	0.060	0.00144U
Bodie Mine	BM-SA2(D)	8.5	7	0.0016	0.19	0.072	0.00143U
Element Productions	EP-SA1	**40.6**	**280**	0.015J	**4.03**	0.701	0.0015U
Element Productions	EP-SA2	**42.1**	**438**	0.00911J	**4.79**	0.809	0.00148U
Gorilla Gardens	GG-SA1	**41.1**	**530**	0.00639J	**2.98**	0.383J	0.00154U
Gorilla Gardens	GG-SA2	19.5	**293**	0.00358J	**2.29**	0.164J	0.00152U
Green Ridge	GRP-SA1	13.6	210	0.0302J	**9.38**	1.960	**0.03820**
Green Ridge	GRP-SA2	11.5	210	0.0658J	**20.50**	**5.760**	**0.02730**
Higher Education	HE-SA1	6.0	6	0.0015	0.15	0.057	0.00018J
Higher Education	HE-SA2	7.2	5	0.0010	0.12	0.034	0.00051
Higher Education	HE-SA2(D)	6.8	6	NA	NA	NA	NA
Kibble Junction	KJ-SA1	**29.7**	52	0.0046	**1.28**	0.119	0.00043
Kibble Junction	KJ-SA2	**28.4**	112	0.0100	**1.61**	0.424	0.00078
Kibble Junction	KJ-SA2(D)	**28.4**	39	NA	NA	NA	NA
Okanogan Gold Producer	OG-SA1	8.0	5	0.0002	0.01	0.004	0.00141U
Okanogan Gold Producer	OG-SA2	6.9	5	0.0004	0.01	0.006	0.00144U

Pleasant Valley Farms	PSV-SA1	**28.7**	**572**	0.00164J	**1.17**	0.159J	**0.00395J**
Pleasant Valley Farms	PSV-SA2	**30.2**	**510**	0.00334J	**2.21**	0.275	**0.01110J**
Sweet Leaf Sowers	SLS-SA1	**24.6**	221	0.00521J	**2.22**	0.485	0.00153U
Sweet Leaf Sowers	SLS-SA2	**23.0**	**271**	0.00659J	**2.75**	0.442	0.00155U
Techbud	T-SA1	3.5	6	0.0026	0.07	0.036	0.00157U
Techbud	T-SA2	4.8	6	0.0006	0.02	0.011	0.00159U
The Pound LLC	TP-SA1	**24.7**	**256**	0.0275	**1.54**	1.680	0.00166J
The Pound LLC	TP-SA2	**29.1**	95	0.0621	**2.84**	**3.070**	0.0014U
Walden	W-SA1	17.0	244	0.00478J	**2.74**	0.481	**0.01690J**
Walden	W-SA2	17.5	218	0.0037J	**1.63**	0.295	**0.01730J**
Walden	W-SA2(D)	**22.6**	**376**	0.0031	**1.55**	0.250	**0.0150**

Bolded text indicates contaminant exceeds Ecology Final Protective Concentration.
* Cleanup level based on direct contact using Equation 740-2 and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil (Ecology, 2013).
NA: Not Analyzed for Constituent.
U: Sample not detected at or above-reported quantitation limit, which is listed.
J: The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Protection based on the Food Consumption Pathway

It is important to note that the above protective levels have been based on soil (direct contact) and soil concentrations derived for the protection of groundwater, not based on the food consumption pathway. Please see the Memorandum: *Pesticide Protective Levels for the Food Consumption Pathway* (Ecology, 2023b) for a reference on the food consumptive pathway (Appendix H).

Soil (Direct Contact): Concentrations that, due to direct contact with contaminated soil, are estimated to result in no acute or chronic noncarcinogenic toxic effects on human health using a hazard quotient of one (1) and concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to one in one million (1×10^{-6}). Model Toxics Control Act (MTCA) equations 740-1 and 740-2 and the default assumptions shall be used to calculate the concentration for direct contact with the contaminated soil.

Groundwater Protection: Concentrations that will not cause contamination of groundwater at levels that exceed groundwater cleanup levels established under WAC 173-340720 as determined using the methods described in WAC 173-340-747.

Food Consumption: The food consumption pathway risk evaluation (Appendix H) was conducted in response to concerns raised by the LCB over pesticide levels reported in cannabis foliage. The exposure pathway related the human consumption of homegrown vegetables contaminated with pesticides is expected to be much different than ingestion pathways associated with cannabis. As such, this scenario is not intended to be a direct proxy for characterizing exposure and risk to pesticides in cannabis via ingestion but may provide a conservative approach to evaluating exposure to these pesticides in soil and plant tissue via human consumption. However, the degree to which risk as it relates to cannabis may have been under- or overestimated is unknown.

Addressing Widespread Use of Pesticide Application in Soil

Sampling and analytic results indicate historic lead-arsenate and DDT pesticide application within the areas of cannabis productions under this project investigation. Ecology acknowledges that the historic use of pesticides and herbicides has resulted in soil and groundwater contamination in Washington State. Some of these chemicals can remain in the soil and groundwater at concentrations well in excess of cleanup levels for decades after their use has stopped. For example, elevated concentrations of arsenic and lead have been found in orchards due to the use of lead arsenicals prior to the introduction of DDT in 1945. Independent cleanup actions at several eastern Washington sites have included the removal and disposal of contaminated soil. Ecology encourages these independent cleanup actions. Ecology continues to collect data on the extent and concentrations within the affected areas. Ecology also provides information about the potential health risks resulting from the conversion of these agricultural properties to other uses (e.g., residential) where exposure could be increased.

For more information regarding how Ecology proposes to address the widespread use of pesticides and herbicides and their lasting effects on soil, please see GQ 21.2 of: *Concise Explanatory Statement for the Amendments to the Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC* (Ecology, 2001).

Sample-Specific Nomenclature Codes

Sample-specific nomenclature codes have been provided to allow the user to match Manchester Environmental Laboratory with specific cannabis farms. In general, the codes are as follows:

Argo Technic = AT – Sa 1, AT – Sa 2, AT – Sa 3
Element Productions = EP – Sa 1, EP – Sa 2, EP – Sa 3
Pleasant Valley Farms = PSV – Sa 1, PSV – Sa 2, PSV Sa – 3
Gorilla Gardens = GG – Sa 1, GG – Sa 2, GG – Sa 3
Sweet Leaf Sowers = SLS – Sa 1, SLS – Sa 2, SLS – Sa 3
Green Ridge = GRP – Sa 1, GRP – Sa 2, GRP – Sa 3
Walden = W – Sa 1, W – Sa 2, W – Sa 3
Techbud = T – Sa 1, T – Sa 2, T – Sa3

Heyfor Farm = HF – Sa 1, HF – Sa 2, HF – Sa 3
The Pound LLC = TP – Sa 1, TP
Kibble Junction = KJ – Sa 1, KJ – Sa 2, KJ – Sa 3
Beausoleil = B – Sa 1, B – Sa 2, B – Sa 3
Okanogan Gold Producer = OG – Sa 1, OG – Sa 2, OG – Sa 3
Chois Growers = CG – Sa 1, CG – Sa 2, CG – Sa 3
Techbud = T – Sa 1, T – Sa 2, T – Sa 3
Higher Education = HE – Sa 1, HE – Sa 2, HE – Sa 3
Bodie Mine = BM – Sa 1, BM – Sa 2, BM – Sa 3

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Appendices

Appendix A

Field Sampling and Analysis Project Plan (SAPP): Soil Sampling for Pesticides, VOCs, PAHs, and Metals in Selected Agricultural Fields in Okanogan County

Appendix B

Washington State Department of Ecology, Manchester Environmental Laboratory: Chain of Custody

Appendix C

PEST2PCB Analytical Results

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Appendix E

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Appendix F

Metals Analytical Results

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Appendix H

Memorandum: *Pesticide Protective Levels for the Food Consumption Pathway*

Appendix A

Field Sampling and Analysis Project Plan (SAPP): Soil Sampling for Pesticides, VOCs, PAHs, and Metals in Selected Agricultural Fields in Okanogan County

Final Sampling and Analysis Project Plan (SAPP): Soil Sampling for Pesticides, VOCs, PAHs, and Metals in Selected Agricultural Fields in Okanogan County

Reviewed by:

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Contents

Background

The Washington State Liquor and Cannabis Board (LCB) has informed the Department of Ecology (Ecology) that there is an area within Okanogan County that has demonstrated an increase in the detection of the persistent toxic contaminant DDE in cannabis plant tissue over the past six years. These areas have been/currently are growing cannabis crops for retail sale. The LCB has requested that Ecology sample soil (as part of an Initial Investigation) within specific locations to help determine:

1. If there is contamination in the soil; and

2. If so, what specific contaminants exist, and at what concentrations.

As a result, it has been proposed that Ecology sample and analyze soil from the specific locations as designated by LCB for the following contaminant classes:

1. Organochlorine Pesticides – including polychlorinated biphenyls (PCBs),
2. Volatile organic compounds (VOAs),
3. Polycyclic aromatic hydrocarbons (PAHs), and
4. Metals.

Project Personnel and Schedule

Task	Due date	Lead staff
Field work	April 13, 2023	Arthur Buchan
Laboratory analyses	April, 2023	Manchester Lab
Lab data validation	Month year	name

Soil Collection

Soil samples will be collected from sixteen locations provided to Ecology from LCB. Sampling within each location is to be completed in specific areas as close to the center of the agricultural plot as possible. On day one (04/11/2023) specific sample locations will be selected and designated with a flag. Two VOA samples will be obtained on 04/11/2023, and two Pesticide/PAH/metals samples will be obtained on 04/12/2023.

Soil will be collected in the field, labeled, stored, and transported to the Department of Ecology, Manchester Environmental Laboratory (MEL) for the following analyses:

- Organochlorine Pesticides – including PCBs (USEPA 8082A),
- VOAs (USEPA 8260D),
- PAHs (USEPA 8270E), and
- Metals (USEPA SW6020B series).

Two types of soil samples should be collected at each sampling point. Sampling should be conducted 2 to 10 inches (5 to 25 cm) below the surface (depth based on cannabis root depth in the soils).

- Samples for analyses other than VOAs will be collected with a hand trowel or spoon into a 4 or 8 oz soil jar depending on analysis. The jar will be filled up to the rim, and then be placed directly in the cooler with ice.
- Soil samples for Volatile Organic Analysis (VOA) will use Option 3: Field Preservation Procedure (physical preservation - freezing) (Ecology, 2004). Soil samples for VOA analysis will be collected and transported using an EnCore® Sampler. Samples must be shipped to the lab within 48 hours from the time of sample collection. The lab would then preserve the sample with sodium bisulfate, methanol, or by freezing to <-7ºC.

Sample Locations

Locations Ecology will be conducting sampling (in no particular order) are listed below. It is recommended that samples containers are labeled prior to sampling. At each location, two VOA and two Pesticide/PAH/metals samples will be obtained. Duplicates are denoted with a (D). Four duplicates for VOA, four duplicates for Metals, two duplicates for Pest2PCB, and two duplicates for PAH's.

3. **Walden**
   1104 Old Hwy 97 Suite A
   Brewster, WA

- VOA = W – Sa 1, W – Sa 2, W – Sa 2(D)
- Pest2PCB = W – Sa 1, W – Sa 2, W – Sa 2(D)
- PAH = W – Sa 1, W – Sa 2, W – Sa 2(D)
- Metals = W – Sa 1, W – Sa 2, W – Sa 2(D)

4. **Bodie Mine**
   75 Pit Road Suite G
   Brewster, WA

- VOA = BM – Sa 1, BM – Sa 2, BM – Sa 2 (D)
- Pest2PCB = BM – Sa 1, BM – Sa 2, BM – Sa 2 (D)
- PAH = BM – Sa 1, BM – Sa 2, BM – Sa 2 (D)
- Metals = BM – Sa 1, BM – Sa 2, BM – Sa 2 (D)

5. **Kibble Junction**
   73 Pit Road Suite B
   Brewster, WA

- VOA = KJ – Sa 1, KJ – Sa 2, KJ – Sa 2 (D)
- Pest2PCB = KJ – Sa 1, KJ – Sa 2
- PAH = KJ – Sa 1, KJ – Sa 2
- Metals = KJ – Sa 1, KJ – Sa 2, KJ – Sa 2 (D)

6. **Higher Education**
   75 Pit Road Suite C
   Brewster, WA

- VOA = HE – Sa 1, HE – Sa 2, HE – Sa 2 (D)
- Pest2PCB = HE – Sa 1, HE – Sa 2
- PAH = HE – Sa 1, HE – Sa 2
- Metals = HE – Sa 1, HE – Sa 2, HE – Sa 2 (D)

7. **The Pound LLC**
   73 Pit Road Suite A
   Brewster, WA

- VOA = TP – Sa 1, TP – Sa 2
- Pest2PCB = TP – Sa 1, TP – Sa 2
- PAH = TP – Sa 1, TP – Sa 2
- Metals = TP – Sa 1, TP – Sa 2

8. **Chois Growers LLC**
   74 Pit Road Suite F
   Brewster, WA

- VOA = CG – Sa 1, CG – Sa 2
- Pest2PCB = CG – Sa 1, CG – Sa 2
- PAH = CG – Sa 1, CG – Sa 2
- Metals = CG – Sa 1, CG – Sa 2

9. **Okanogan Gold Producer**
   74 Pit Road Suite D
   Brewster, WA

- VOA = OG – Sa 1, OG – Sa 2
- Pest2PCB = OG – Sa 1, OG – Sa 2
- PAH = OG – Sa 1, OG – Sa 2
- Metals = OG – Sa 1, OG – Sa 2

10. **Gorilla Gardens**
    1074 Old Highway 97 Suite B
    Brewster, WA

- VOA = GG – Sa 1, GG – Sa 2
- Pest2PCB = GG – Sa 1, GG – Sa 2
- PAH = GG – Sa 1, GG – Sa 2
- Metals = GG – Sa 1, GG – Sa 2

11. **Beausoleil**
    74 Pit Road Suite C
    Brewster WA

- VOA = B – Sa 1, B – Sa 2
- Pest2PCB = B – Sa 1, B – Sa 2
- PAH = B – Sa 1, B – Sa 2
- Metals = B – Sa 1, B – Sa 2

12. **Heyfor Farm LLC**
    65 Pit Road Suite Z
    Brewster WA

- VOA = HF – Sa 1, HF – Sa 2
- Pest2PCB = HF – Sa 1, HF – Sa 2
- PAH = HF – Sa 1, HF – Sa 2
- Metals = HF – Sa 1, HF – Sa 2

11. **Green Ridge Productions**
    1104 Old Highway 97 Suite C
    Brewster, WA

- VOA = GRP – Sa 1, GRP – Sa 2
- Pest2PCB = GRP – Sa 1, GRP – Sa 2
- PAH = GRP – Sa 1, GRP – Sa 2
- Metals = GRP – Sa 1, GRP – Sa 2

12. **Pleasant Valley Farms**
    1074 Old Highway 97 Suite E
    Brewster, WA

- VOA = PSV – Sa 1, PSV – Sa 2
- Pest2PCB = PSV – Sa 1, PSV – Sa 2
- PAH = PSV – Sa 1, PSV – Sa 2
- Metals = PSV – Sa 1, PSV – Sa 2

13. **Techbud**
    74 Pit Road Suite N
    Brewster, WA

- VOA = T – Sa 1, T – Sa 2
- Pest2PCB = T – Sa 1, T – Sa 2
- PAH = T – Sa 1, T – Sa 2
- Metals = T – Sa 1, T – Sa 2

14. Sweet Leaf Sowers
1084 Old Highway 97 Suite B
Brewster, WA

- VOA = SLS – Sa 1, SLS – Sa 2
- Pest2PCB = SLS – Sa 1, SLS – Sa 2
- PAH = SLS – Sa 1, SLS – Sa 2
- Metals = SLS – Sa 1, SLS – Sa 2

15. Agro Technic
1074 Old Highway 97 Suite C
Brewster, WA

- VOA = AT – Sa 1, AT – Sa 2
- Pest2PCB = AT – Sa 1, AT – Sa 2
- PAH = AT – Sa 1, AT – Sa 2
- Metals = AT – Sa 1, AT – Sa 2

16. Element Productions Inc.
1074 Old Highway 97 Suite D
Brewster, WA

- VOA = EP – Sa 1, EP – Sa 2
- Pest2PCB = EP – Sa 1, EP – Sa 2
- PAH = EP – Sa 1, EP – Sa 2
- Metals = EP – Sa 1, EP – Sa 2

Sample Labeling, Storage, and Handling

All sample containers will be labeled with the site name, date and time of collection, sample matrix, sample ID, and analysis to be performed. One field duplicate will be collected for each sample type for every five samples (i.e., one duplicate for each sample type at each sampling location), for use as quality control samples.

After collection, all samples will be stored on ice and transported to MEL for analysis. All non-VOA samples will be held at <4 (±2) °C and VOA samples will be stored frozen at -18 to -20 °C. Sample holding times are as follows:

- 48 hours for refrigerated/chilled VOA samples.
- 14 days for chilled non-VOA samples.

Decontamination

All equipment used to collect samples will be stainless steel or PTFE-coated and will be cleaned before use at each site following Ecology's standard operating procedure (SOP) EAP090 for Decontaminating Field Equipment for Sampling Toxics in the Environment (Friese, 2020) as follows:

- Washed with phosphate-free Liquinox® detergent or Alconox mixture.
- Rinsed with tap water and then with distilled water.
- Allowed to air dry.
- If not used immediately, wrapped in aluminum foil.

Methanol rinse will not be used since low-level sampling (near analytical reporting limits) is not required.

Sampling equipment, such as augers, trowels, spoons, and sieves, used at multiple sites will be fully cleaned prior to use at the next location. Nitrile powder-free gloves will be worn while collecting samples and replaced between sampling locations to further prevent contamination between sites.

To prevent the spread of invasive species, staff will follow procedures outlined in the Standard Operating Procedure (SOP) document for Minimizing the Spread of Invasive Species (Parsons, 2021). All field gear will be visually inspected for dirt, seeds, vertebrates, and vegetation. These will be brushed or washed off at the site before moving to the next site. Field personnel will follow this same process for their shoes and clothing.

Waste management

All excess soil and rinse water will be returned to the sampling location. Disposable materials produced in the field such as gloves and paper towels will be collected in garbage bags and removed from the study site for proper disposal in a non-hazardous waste receptacle.

Safety

Ecology personnel will be accompanied to each location by LCB officials.

Sites will be evaluated as to whether they require specialized training to access the site (e.g., Hazardous Waste Operations and Emergency Response [HAZWOPER] training) and what level of personal protection is needed for safety. Trained personnel will be used for field collection in sites where such safety concerns exist. All others will follow the safety procedures discussed below.

Safety protocols found in the latest version of Ecology's Chemical Hygiene Plan and the Environmental Assessment Program's Safety Manual (Ecology, 2023 and 2021) will be followed when in the field. Gloves will be worn when handling samples to prevent cross-contamination with any contaminants. Gloves should be discarded after each sampling and a fresh pair of gloves should be used for each new sampling location. Staff will stay up-wind of soils disturbed during sampling when soil particles are likely to become air-borne (e.g., dry conditions and windy).

Chain of Custody

Chain of Custody (COC) is a procedure meant to ensure that samples are handled, stored, and transported appropriately and no evidence of sample tampering exists. Its purpose is to trace sample possession from the time of collection through analysis ensuring creditability of results. When samples are collected, the date and time of collection and a sample ID will be recorded on the container, the chain of custody form, and in the field notes. Once the samples arrive at Ecology's MEL, they will be inventoried, and the transfer from the field to lab personnel will be documented in the chain of custody form. A copy of the completed chain of custody form will be returned by MEL to the project manager to keep in the project files.

Shipping

If necessary, MEL may transfer custody of samples to a contract lab via a commercial courier. Soil samples to be analyzed or tested by the contract lab will be expedited in a cooler with a chain of custody form, packing material (e.g., bubble wrap), bottled ice, a temperature blank, and sealed for tamper monitoring. Upon receipt, the contract lab will record the temperature of the temperature blank, inventory the samples, and note other observations on the Chain of Custody form.

Equipment Provided By Contract Laboratory

Manchester Environmental Laboratory will provide to Ecology the following items:

- Shipping Coolers.
- Blue ice.
- Storage containers.
- Sample labels.
- Chain of custody.
- Custody seals.

Equipment Provided By Ecology Sampling Team

Ecology Sampling Personnel will provide the following items:

- Stainless steel hand augers.
- Stainless steel spoons.
- Stainless steel hand shovels.
- Plastic storage containers.
- Nitrile gloves.
- Paper towels.
- Trash bags.
- 5-gallon decontamination buckets.
- Decontamination detergent and distilled water.
- Sample location map (aerials printed out from Google Maps).
- Field notebook.

Laboratory Analysis and Reporting Limits

Samples will be analyzed at Ecology's MEL, which is accredited for the analyses listed below. If necessary to meet sample holding times or other circumstances, MEL may send samples to a contract laboratory accredited for these analyses.

MEL will subsample non-VOA samples for each of the analyses listed here. Please include a list of the specific contaminants that will be analyzed with Laboratory Method Reporting Limits.

Contaminants tested (Analyte) and Method Detection Limits (MDL) and Method Reporting Limits (MRL):

Metals (Please note that USEPA SW6020B will be used)

					Surr.	DUP	Matrix Spike		Blank Spike		
Method	Analyte	MDL	MRL	Units	%R	RPD	%R	RPD	%R	RPD	CAS #
Metals											
in Sediment/Soil											
EPA200.8	Arsenic	0.0140	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7440-38-2
EPA200.8	Barium	0.0230	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7440-39-3
EPA200.8	Cadmium	0.0140	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7440-43-9
EPA200.8	Chromium	0.0200	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7440-47-3
EPA200.8	Lead	0.0110	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7439-92-1
EPA200.8	Selenium	0.0440	0.500	mg/Kg dw	-	20	75-125	20	85-115	20	7782-49-2
EPA200.8	Silver	0.00210	0.100	mg/Kg dw	-	20	75-125	20	85-115	20	7440-22-4

Pesticides

					Surr.	DUP	Matrix Spike		Blank Spike		
Method	**Analyte**	**MDL**	**MRL**	**Units**	**%R**	**RPD**	**%R**	**RPD**	**%R**	**RPD**	**CAS #**
PEST2PCB											
SW8081B8082A	Alpha-BHC	0.0316	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	319-84-6
SW8081B8082A	Beta-BHC	0.0285	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	319-85-7
SW8081B8082A	Gamma-BHC	0.122	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	58-89-9
SW8081B8082A	Delta-BHC	0.0845	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	319-86-8
SW8081B8082A	Heptachlor	0.0249	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	76-44-8
SW8081B8082A	Aldrin	0.0323	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	309-00-2
SW8081B8082A	Heptachlor Epoxide	0.0448	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	1024-57-3
SW8081B8082A	trans-Chlordane	0.0321	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	5103-74-2
SW8081B8082A	cis-Chlordane	0.0812	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	5103-71-9
SW8081B8082A	Endosulfan I	0.0682	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	959-98-8
SW8081B8082A	Dieldrin	0.0526	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	60-57-1
SW8081B8082A	Endrin	0.0702	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	72-20-8
SW8081B8082A	Endrin Ketone	0.107	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	53494-70-5
SW8081B8082A	Endrin Aldehyde	0.0543	0.250	ug/Kg dw dry \	-	40	50-150	40	50-150	40	7421-93-4
SW8081B8082A	Endosulfan Sulfate	0.0919	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	1031-07-8
SW8081B8082A	4,4'-DDE	0.0488	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	72-55-9
SW8081B8082A	4,4'-DDD	0.0795	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	72-54-8
SW8081B8082A	4,4'-DDT	0.0418	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	50-29-3
SW8081B8082A	Oxychlordane	0.0238	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	27304-13-8
SW8081B8082A	Cis-Nonachlor	0.0474	0.125	ug/Kg dw dry \	-	40	50-150	40	50-150	40	5103-73-1
SW8081B8082A	PCB-aroclor-1016		2.50	ug/Kg dw dry \	-	40	50-150	40	50-150	40	12674-11-2
SW8081B8082A	PCB-aroclor-1221		2.50	ug/Kg dw dry \	-	40	50-150	40	50-150	40	11104-28-2
SW8081B8082A	PCB-aroclor-1232		2.50	ug/Kg dw dry \	-	40	50-150	40	50-150	40	11141-16-5
SW8081B8082A	PCB-aroclor-1242		2.50	ug/Kg dw dry \	-	40	50-150	40	50-150	40	53469-21-9
SW8081B8082A	PCB-aroclor-1248		1.25	ug/Kg dw dry \	-	40	50-150	40	50-150	40	12672-29-6
SW8081B8082A	PCB-aroclor-1254		1.25	ug/Kg dw dry \	-	40	50-150	40	50-150	40	11097-69-1
SW8081B8082A	PCB-aroclor-1260		1.25	ug/Kg dw dry \	-	40	50-150	40	50-150	40	11096-82-5
SW8081B8082A	PCB-aroclor-1262		1.25	ug/Kg dw dry \	-	40	50-150	40	50-150	40	37324-23-5
SW8081B8082A	PCB-aroclor-1268		1.25	ug/Kg dw dry \	-	40	50-150	40	50-150	40	11100-14-4
SW8081B8082A	Tetrachloro-m-xylene			Surrogate	30-130	40	-	-	50-150	-	877-09-8
SW8081B8082A	4,4-Dibromooctafluorobiphenyl (DBOB)			Surrogate	30-130	40	-	-	50-150	-	10386-84-2
SW8081B8082A	Dibutylchlorendate			Surrogate	20-130	40	-	-	50-150	-	1770-80-5
SW8081B8082A	Decachlorobiphenyl (DCB)			Surrogate	30-130	40	-	-	50-150	-	2051-24-3

VOA

					Surr.	DUP	Matrix Spike		Blank Spike		
Method	**Analyte**	**MDL**	**MRL**	**Units**	**%R**	**RPD**	**%R**	**RPD**	**%R**	**RPD**	**CAS #**
VOA											
SW8260D	Dichlorodifluoromethane	1.48	2.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	75-71-8
SW8260D	Chloromethane	0.186	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	74-87-3
SW8260D	Vinyl Chloride	0.384	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	75-01-4
SW8260D	Bromomethane	0.434	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	74-83-9
SW8260D	Chloroethane	0.348	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-00-3
SW8260D	Trichlorofluoromethane	0.415	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-69-4
SW8260D	Ethyl Ether	0.423	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	60-29-7
SW8260D	1,1,2-Trichlorotrifluoroethane	0.437	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	76-13-1
SW8260D	1,1-Dichloroethene	0.459	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-35-4
SW8260D	Acetone		1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	67-64-1
SW8260D	Methyl Iodide	0.449	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	74-88-4
SW8260D	Carbon Disulfide	0.394	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-15-0
SW8260D	Methylene Chloride	0.442	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	75-09-2
SW8260D	Methyl t-butyl ether	0.461	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	1634-04-4
SW8260D	Trans-1,2-Dichloroethene	0.404	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	156-60-5
SW8260D	1,1-Dichloroethane	0.426	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-34-3
SW8260D	2-Butanone	0.721	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	78-93-3
SW8260D	Cis-1,2-Dichloroethene	0.439	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	156-59-2
SW8260D	2,2-Dichloropropane	0.302	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	594-20-7
SW8260D	Bromochloromethane	0.446	1.00	ug/Kg dw dry v	-	40	50-150	40	75-125	40	74-97-5
SW8260D	Chloroform	0.364	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	67-66-3
SW8260D	Tetrahydrofuran	0.838	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	109-99-9
SW8260D	1,1,1-Trichloroethane	0.359	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	71-55-6
SW8260D	1,1-Dichloropropene	0.422	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	563-58-6
SW8260D	Carbon Tetrachloride	0.349	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	56-23-5
SW8260D	1,2-Dichloroethane	0.351	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	107-06-2
SW8260D	Benzene	0.469	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	71-43-2
SW8260D	Trichloroethene	0.419	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	79-01-6
SW8260D	1,2-Dichloropropane	0.414	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	78-87-5
SW8260D	Dibromomethane	0.447	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	74-95-3
SW8260D	Bromodichloromethane	0.349	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-27-4
SW8260D	Cis-1,3-Dichloropropene	0.358	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	10061-01-5
SW8260D	4-Methyl-2-pentanone	0.381	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	108-10-1
SW8260D	Toluene	0.465	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	108-88-3
SW8260D	Trans-1,3-Dichloropropene	0.348	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	10061-02-6
SW8260D	1,1,2-Trichloroethane	0.446	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	79-00-5
SW8260D	1,3-Dichloropropane	0.410	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	142-28-9
SW8260D	2-Hexanone	0.366	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	591-78-6
SW8260D	Tetrachloroethene	0.378	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	127-18-4
SW8260D	Dibromochloromethane	0.307	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	124-48-1
SW8260D	1,2-Dibromoethane	0.374	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	106-93-4
SW8260D	Chlorobenzene	0.442	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	108-90-7
SW8260D	1,1,1,2-Tetrachloroethane	0.351	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	630-20-6
SW8260D	Ethylbenzene	0.372	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	100-41-4
SW8260D	m,p-Xylene	0.743	2.00	ug/Kg dw dry v	-	30	50-150	30	75-125	40	179601-23-1
SW8260D	o-Xylene	0.347	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	95-47-6
SW8260D	Styrene	0.312	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	100-42-5
SW8260D	Bromoform	0.306	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	75-25-2
SW8260D	Isopropylbenzene (Cumene)	0.424	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	98-82-8
SW8260D	1,1,2,2-Tetrachloroethane	0.320	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	79-34-5
SW8260D	Trans-1,4-Dichloro-2-butene	0.325	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	110-57-6
SW8260D	1,2,3-Trichloropropane	0.440	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	96-18-4
SW8260D	Bromobenzene	0.414	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	108-86-1
SW8260D	n-Propylbenzene	0.470	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	103-65-1
SW8260D	2-Chlorotoluene	0.505	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	95-49-8
SW8260D	1,3,5-Trimethylbenzene	0.436	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	108-67-8

SW8260D	4-Chlorotoluene	0.412	1.00	ug/Kg dw dry v	-	40	50-150	40	60-140	40	106-43-4
SW8260D	Tert-Butylbenzene	0.410	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	98-06-6
SW8260D	1,2,4-Trimethylbenzene	0.422	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	95-63-6
SW8260D	Pentachloroethane	0.381	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	76-01-7
SW8260D	Sec-Butylbenzene	0.390	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	135-98-8
SW8260D	p-Isopropyltoluene	0.367	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	99-87-6
SW8260D	1,3-Dichlorobenzene	0.457	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	541-73-1
SW8260D	1,4-Dichlorobenzene	0.504	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	106-46-7
SW8260D	n-Butylbenzene	0.401	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	104-51-8
SW8260D	1,2-Dichlorobenzene	0.478	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	95-50-1
SW8260D	Hexachloroethane	0.365	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	67-72-1
SW8260D	1,2-Dibromo-3-Chloropropane	0.350	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	96-12-8
SW8260D	1,2,4-Trichlorobenzene	0.532	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	120-82-1
SW8260D	Hexachlorobutadiene	0.508	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	87-68-3
SW8260D	Naphthalene	0.406	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	91-20-3
SW8260D	1,2,3-Trichlorobenzene	0.460	1.00	ug/Kg dw dry v	-	30	50-150	30	75-125	30	87-61-6
SW8260D	1,2-Dichloroethane-D4			Surrogate	80-120	-	-	-	-	-	17060-07-0
SW8260D	1,4-Difluorobenzene			Surrogate	80-120	-	-	-	-	-	540-36-3
SW8260D	Toluene-D8			Surrogate	80-120	-	-	-	-	-	2037-26-5
SW8260D	p-Bromofluorobenzene			Surrogate	80-120	-	-	-	-	-	460-00-4
SW8260D	1,2-Dichlorobenzene-D4			Surrogate	80-120	-	-	-	-	-	2199-69-1
SW8260D	Fluorobenzene			ug/Kg dw dry v	-	-	-	-	-	-	462-06-6
SW8260D	Chlorobenzene-D5			ug/Kg dw dry v	-	-	-	-	-	-	3114-55-4
SW8260D	1,4-Dichlorobenzene-D4			ug/Kg dw dry v	-	-	-	-	-	-	3855-82-1

PAH's

					Surr.	DUP	Matrix Spike		Blank Spike		
Method	**Analyte**	**MDL**	**MRL**	**Units**	**%R**	**RPD**	**%R**	**RPD**	**%R**	**RPD**	**CAS #**
PAH											
SW8270E	Naphthalene	3.54	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	91-20-3
SW8270E	2-Methylnaphthalene	3.82	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	91-57-6
SW8270E	1-Methylnaphthalene	3.32	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	90-12-0
SW8270E	2-Chloronaphthalene	1.97	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	91-58-7
SW8270E	Acenaphthylene	6.18	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	208-96-8
SW8270E	Acenaphthene	4.55	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	83-32-9
SW8270E	Dibenzofuran	6.07	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	132-64-9
SW8270E	Fluorene	4.80	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	86-73-7
SW8270E	Phenanthrene	3.71	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	85-01-8
SW8270E	Anthracene	4.72	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	120-12-7
SW8270E	Carbazole	2.59	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	86-74-8
SW8270E	Fluoranthene	2.34	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	206-44-0
SW8270E	Pyrene	3.19	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	129-00-0
SW8270E	Retene	4.99	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	483-65-8
SW8270E	Benz[a]anthracene	2.97	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	56-55-3
SW8270E	Chrysene	3.86	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	218-01-9
SW8270E	Benzo(b)fluoranthene	3.17	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	205-99-2
SW8270E	Benzo(k)fluoranthene	4.19	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	207-08-9
SW8270E	Benzo(a)pyrene	2.81	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	50-32-8
SW8270E	Indeno(1,2,3-cd)pyrene	4.55	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	193-39-5
SW8270E	Dibenzo(a,h)anthracene	2.87	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	53-70-3
SW8270E	Benzo(ghi)perylene	3.23	12.5	ug/Kg dw dry v	-	40	50-150	40	50-150	40	191-24-2
SW8270E	2-Fluorobiphenyl			Surrogate	30-115	-	-	-	-	-	321-60-8
SW8270E	Acenaphthylene-D8			Surrogate	50-150	-	-	-	-	-	93951-97-4
SW8270E	Fluorene-D10			Surrogate	50-150	-	-	-	-	-	81103-79-9
SW8270E	Anthracene-D10			Surrogate	50-150	-	-	-	-	-	1719-06-8
SW8270E	Pyrene-D10			Surrogate	50-150	-	-	-	-	-	1718-52-1
SW8270E	Terphenyl-D14			Surrogate	18-137	-	-	-	-	-	1718-51-0
SW8270E	Benzo(a)pyrene-D12			Surrogate	50-150	-	-	-	-	-	63466-71-7
SW8270E	Naphthalene-D8			ug/Kg dw dry v	-	-	-	-	-	-	1146-65-2
SW8270E	Acenaphthene-D10			ug/Kg dw dry v	-	-	-	-	-	-	15067-26-2
SW8270E	Phenanthrene-D10			ug/Kg dw dry v	-	-	-	-	-	-	1517-22-2
SW8270E	Chrysene-D12			ug/Kg dw dry v	-	-	-	-	-	-	1719-03-5
SW8270E	Perylene-D12			ug/Kg dw dry v	-	-	-	-	-	-	1520-96-3

Data Verification, Validation, and Reporting Procedures

To be filled in at a later date.

Analytics Estimate

Analytics will be performed by Ecology (Manchester Laboratory). Estimated laboratory costs have been attached below:

Analytical Services Quotation

LCB Sampling					Bid Date:	04/06/2023
Caron, Rachel					Bid Expires:	04/05/2024
Caron, Rachel					Prices Expire:	04/05/2024

Matrix	Parameters	Method	#	TAT (days)	Unit Price	Extended Price
Sediment/Soil	Arsenic	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Cadmium	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Silver	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Chromium	SW6020B	30	30	$152.00	$4,560.00
Sediment/Soil	Selenium	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Barium	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Lead	SW6020B	30	30	$0.00	$0.00
Sediment/Soil	Chlorinated Pesticides & Polychlorinated Biphenyls(PEST2PCB)	SW8081B8082A	30	30	$295.00	$8,850.00
Sediment/Soil	PAH	SW8270E	30	30	$395.00	$11,850.00
Sediment/Soil	Volatile Organics Analysis(VOA)	SW8260D	30	30	$225.00	$6,750.00

Item	Description	ItemType	Quantity	Price	Rate	ItemTotal
LineItem	MS/MSD for PEST 2 PCB	Standard	1	$295.00		$295.00
LineItem	MS/MSD on Metals Group Analy	Standard	1	$152.00		$152.00
LineItem	MS/MSD on PAH	Standard	1	$395.00		$395.00
LineItem	MS/MSD on VOA	Standard	1	$225.00		$225.00
						$33,077.00

References

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Ecology, 2023. *Chemical Hygiene Plan for the Lacey Ecology Building and the EAP Operations Center.*[2]
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Friese, M. 2020. *Standard Operating Procedure EAP090, Version 1.2: Decontaminating Field Equipment for Sampling Toxics in the Environment. Publication 21-03-202*.[4] [Recertified 2020.]

Washington State Department of Ecology, Olympia.

Parsons, J. 2021. *Standard Operating Procedure EAP070, Version 2.3: Minimize the Spread of Invasive Species*.[5] [Recertified 2021.]
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[1] https://apps.ecology.wa.gov/publications/SummaryPages/0409087.html
[2] http://awwecology/sites/hri/safetyOffice/SitePages/Home.aspx
[3] http://teams/sites/EAP/safety/FieldOpsandSafetyManual.docx
[4] https://apps.ecology.wa.gov/publications/SummaryPages/2103202.html
[5] https://apps.ecology.wa.gov/publications/SummaryPages/2303225.html

Appendix B

Washington State Department of Ecology, Manchester Environmental Laboratory: Chain of Custody

DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Ecology
Manchester Environmental Laboratory
Chain of Custody

ECY 040-115 (Rev. 07/2019)

Project Name: LCB SAMPLING
MIC (8 digits): J1270
Program: TCP
MEL Work Order #: 2304065
Date Results Needed By: ASAP
Send Results To: Rachel Caron
# of coolers: 3
EIM Study ID:

Year	Month	Day	Hour	Min	Field Station Identification	Sample Number (32 4/12)	Matrix Code	Source Code	No. of Containers
2023	04	11	14	26	KJ-Sa1	01	40	48	3
2023	04	11	14	26	KJ-Sa2	02	40	48	3
2023	04	11	14	25	KJ-Sa2(D)	03	40	48	1
2023	04	11	14	37	HE-SA1	04	40	48	3
2023	04	11	14	35	HE-SA2	05	40	40	3
2023	04	11	14	35	HE-SA2(D)	06	40	48	1
2023	04	11	14	20	B-SA1	07	40	48	3
2023	04	11	14	20	B-SA2	08	40	48	3
2023	04	11	14	08	OG-SA1	09	40	48	3
2023	04	11	14	10	OG-SA2	10	40	48	3
2023	04	11	13	23	T-Sa1	11	40	48	3
2023	04	11	13	20	T-Sa2	12	40	48	3

General Chemistry

Sample Number	Alkalinity	Conductivity	pH	Turbidity	Chloride	TOC-440	SSC	TDS	Total Solids	% Solids	TNVSS	TSS	Ash free dry weight	TOC	DOC	BOD5	Oil & Grease	Ammonia	Nitrite/Nitrate	Orthophosphate	Total Phosphorus	TPN	Chlorophyll	Chlorophyll filter
01																								
02																								
03																								
04																								
05																								
06																								
07																								
08																								
09																								
10																								
11																								
12																								

Micro / Metals (List individual metals and/or request MS/MSD in comments)

Sample Number	Fecal Coliform MF	Fecal Coliform MPN	E. coli MF	E. coli MPN	Total Metals	Dissolved Metals	Hardness	PP Metals -13 metals	Mercury (Hg)	Hg LL 1631e	metals*
01											X
02											X
03											X
04											X
05											X
06											X
07											X
08											X
09											X
10											X
11											X
12											X

Organics (Request MS/MSD and/or dup in comments)

Sample Number	BTEX	TPHG	TPHD	VOA	PCB-Aroclors	PCB-Cong HRMS-Cx	~~[illegible]~~ (BL 4/12)	PESTMS	Carbamates	PBDE	BNA	PAH	PAH/Phthalates	PAH-SIM	PFAS	Pest ZPK
01				[illegible]			~~X~~					X				X
02							~~X~~					X				X
03																
04							~~X~~					X				X
05							~~X~~					X				X
06																
07							~~X~~					X				X
08							~~X~~					X				X
09							~~X~~					X				X
10							~~X~~					X				X
11							~~X~~					X				X
12							~~X~~					X				X

Chain of Custody Record

Relinquished By	Received By	Year	Month	Day	Hour	Min	Tag # or Seal ID	Seal Condition	Locker #	Cooler Temp °C
[signature]	Brodie, Robin	23	04	12	11	00	No Seal			2, 2, 3

Project Officer: Rachel Caron

Phone Number: 509-907-1353

Sampler: AMP

Sampler: JWR

Recorder: JWR

Comments

* Metals = Arsenic, Cadmium, Silver, Chromium, Selenium, Barium, lead.

x Requesting DDT/DDE/DDD on 14-day TAT.

DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Ecology
Manchester Environmental Laboratory
Chain of Custody

ECY 040-115 (Rev. 07/2019)

Project Name: LCB Sampling
MIC (8 digits): J1270 Program: TCP
MEL Work Order #: 2304065
Date Results Needed By: ASAP
Send Results To: Rachel Caron
# of coolers: 3
EIM Study ID:

Bk 4112

	Year	Month	Day	Hour	Min	Field Station Identification	Sample Number	Matrix Code	Source Code	No. of Containers	Metals*	VOA	PCB-Cong HRMS-Cx	PAH	Pest/PCB
13	23	04	11	14	14	TP-Sa1				3	X			X	X
14				14	14	TP-Sa2				3	X			X	X
15				14	33	BM-Sa1				3	X			X	X
16				14	38	BM-Sa2				3	X			X	X
17				14	38	BM-Sa2(D)				2	X			X	X
18				14	45	GG-Sa1				4 3 [illegible]	X	X		X	X
19				14	45	GG-Sa2				4 3 [illegible]	X	X		X	X
20				15	00	GRP-Sa1				4 3 [illegible]	X	X		X	X
21				15	00	GRP-Sa2				4 3 [illegible]	X	X		X	X
22				14	00	EP-Sa1				4 3 [illegible]	X	X		X	X
23				14	00	EP-Sa2				4 3 [illegible]	X	X		X	X
	G3	G3	G3				G3	G3	G3						

Column headings printed on form — Sampling: Date (Year, Month, Day), Time 00:00 – 24:00 (Hour, Min); Field Station Identification; Sample Number; Matrix Code; Source Code; No. of Containers. General Chemistry: Alkalinity, Conductivity, pH, Turbidity, Chloride, TOC-440, SSC, TDS, Total Solids, % Solids, TNVSS, TSS, Ash free dry weight, TOC, DOC, BOD5, Oil & Grease, Ammonia, Nitrite/Nitrate, Orthophosphate, Total Phosphorus, TPN, Chlorophyll, Chlorophyll filter. Micro: Fecal Coliform MF, Fecal Coliform MPN, E. coli MF, E. coli MPN. Metals (List individual metals and/or request MS/MSD in comments): Total Metals, Dissolved Metals, Hardness, PP Metals -13 metals, Mercury (Hg), Hg LL 1631e, Metals*. Organics (Request MS/MSD and/or dup in comments): BTEX, TPHG, TPHD, VOA, PCB-Aroclors, PCB-Cong HRMS-Cx, Bs 4112, PESTMS, Carbamates, PBDE, BNA, PAH, PAH/Phthalates, PAH-SIM, PFAS, Pest/PCB.

Chain of Custody Record

Relinquished By	Received By	Year	Month	Day	Hour	Min	Tag # or Seal ID	Seal Condition	Locker #	Cooler Temp °C
[signature]	Brodey Bastin	23	04	12	11	00	No Seal			2.2.3

Project Officer:

Phone Number:

Sampler: [signature]

Sampler: JWR

Recorder: JWR

Comments

*Metals = Arsenic, Cadmium, Silver, Chromium, Selenium, Barium, lead

DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Ecology
Manchester Environmental Laboratory
Chain of Custody

ECY 040-115 (Rev. 07/2019)

ECY 010-33 (03/15)

Project Name: LCB SAMPLING
MEL Work Order #: 2304065
Send Results To: Rachel Caron
MIC (8 digits): J1270
Program: TCP
Date Results Needed By: ASAP
# of coolers: 3
EIM Study ID:

BR UNL

	Year	Month	Day	Hour	Min	Field Station Identification	Sample Number	Matrix Code	Source Code	No. of Containers	Alkalinity	Conductivity	pH	Turbidity	Chloride	TOC-440	SSC	TDS	Total Solids	% Solids	TNVSS	TSS	Ash free dry weight	TOC	DOC	BOD5	Oil & Grease	Ammonia	Nitrite/Nitrate	Orthophosphate	Total Phosphorus	TPN	Chlorophyll	Chlorophyll filter	Fecal Coliform MF	Fecal Coliform MPN	E. coli MF	E. coli MPN	Total Metals	Dissolved Metals	Hardness	PP Metals -13 metals	Mercury (Hg)	Hg LL 1631e	Metals*		BTEX	TPHG	TPHD	VOA	PCB-Aroclors	PCB-Cong HRMS-Cx	4112	PESTMS	Carbamates	PBDE	BNA	PAH	PAH/Phthalates	PAH-SIM	PFAS	Pest 27PCB
24	2023	04	11	13	00	PSV-SA1		40	48	4 Jar																																			X					X								X				X
25	2023	04	11	13	00	PSV-SA2		〃	〃	4 Jar																																			X					X								X				X
26	2023	04	11	12	30	SLS-SA1		〃	〃	4 Jar																																			X					X								X				X
27	2023	04	11	12	30	SLS-SA2		〃	〃	4 Jar																																			X					X								X				X
28	2023	04	11	14	32	AT-SA1		〃	〃	4 Jar																																			X					X								X				X
29	2023	04	11	14	32	AT-SA2		〃	〃	4 Jar																																			X					X								X				X
30	2023	04	11	12	00	W-SA1		〃	〃	4 Jar																																			X					X								X				X
31	2023	04	11	12	06	W-SA2		〃	〃	4 Jar																																			X					X								X				X
32	2023	04	11	12	00	W-SA2(D)		〃	〃	4 Jar																																			X					X								✓				X
							CB	CB	CB																																																					

Chain of Custody Record

Relinquished By	Received By	Year	Month	Day	Hour	Min	Tag # or Seal ID	Seal Condition	Locker #	Cooler Temp °C
Arth B. Bak	Brodey R[illegible]	23	04	12	11	00	No Seal			2,2,3

Project Officer: Rachel Caron

Phone Number: 509-907-1353

Sampler: [signature]

Sampler: JWR

Recorder: JWR

Comments

*Metals = Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver

DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Ecology
Manchester Environmental Laboratory
Chain of Custody

ECY 040-115 (Rev. 07/2019)

Project Name: LCB SAMPLING
MIC (8 digits): J1270 Program: TCP
MEL Work Order #: 2304065
Date Results Needed By: ASAP
Send Results To: Rachel Caron
# of coolers: 3
EIM Study ID:

General Chemistry: Alkalinity, Conductivity, pH, Turbidity, Chloride, TOC-440, SSC, TDS, Total Solids, % Solids, TNVSS, TSS, Ash free dry weight, TOC, DOC, BOD5, Oil & Grease, Ammonia, Nitrite/Nitrate, Orthophosphate, Total Phosphorus, TPN, Chlorophyll, Chlorophyll filter
Micro: Fecal Coliform MF, Fecal Coliform MPN, E. coli MF, E. coli MPN
Metals (List individual metals and/or request MS/MSD in comments): Total Metals, Dissolved Metals, Hardness, PP Metals -13 metals, Mercury (Hg), Hg LL 1631e
Organics (Request MS/MSD and/or dup in comments): BTEX, TPHG, TPHD, VOA, PCB-Aroclors, PCB-Cong HRMS-Cx, Herbicides, PESTMS, Carbamates, PBDE, BNA, PAH, PAH/Phthalates, PAH-SIM, PFAS

Year	Month	Day	Hour	Min	Field Station Identification	Sample Number	Matrix Code	Source Code	No. of Containers	VOA
2023	04	11	12	28	HE-Sa1	33	40	48	1	X
2023	04	11	12	25	HE-Sa2	34	40	48	1	X
2023	04	11	12	25	HE-Sa2(D)	35	40	48	1	X
2023	04	11	12	16	T-Sa1	36	40	48	1	X
2023	04	11	12	15	T-Sa2	37	40	48	1	X
2023	04	11	11	30	JG-Sa1	38	40	48	1	X
2023	04	11	11	36	JG-Sa2	39	40	48	1	X
2023	04	11	13	45	B-Sa1	40	40	48	1	X
2023	04	11	13	47	B-Sa2	41	40	48	1	X
2023	04	11	12	53	KJ-Sa1	42	40	48	1	X
2023	04	11	12	52	KJ-Sa2	43	40	48	1	X
2023	04	11	12	52	KJ-Sa2(D)	44	40	48	1	X

Chain of Custody Record

Relinquished By	Received By	Year	Month	Day	Hour	Min	Tag # or Seal ID	Seal Condition	Locker #	Cooler Temp °C
[illegible signature]	Brodey [illegible]	23	04	12	11	00	No Seal			2,2,3

Project Officer: Rachel Caron

Phone Number: 509-907-1363

Sampler: JWR

Sampler: GMP

Recorder: JWR

Comments

Requesting DDT/DDE/DDD on 14 day TAT
Metals Arsenic Cadmium Silver Chromium Selenium Barium Lead

ECOLOGY
State of Washington

Washington State Department of Ecology
Manchester Environmental Laboratory
Chain of Custody

ECY 040-115 (Rev. 07/2019)

Project Name: LCB SAMPLING
MEL Work Order #: 2304065
Send Results To: Rachel Caron

MIC (6 digits): J1270
Program: TCP
Date Results Needed By: ASAP
# of coolers:
EIM Study ID:

Year	Month	Day	Hour	Min	Field Station Identification	Sample Number	Matrix Code	Source Code	No. of Containers
2023	04	11	12	44	BM-Sa1	45	40	48	1
2023	04	11	12	40	BM-Sa2	46	40	48	1
2023	04	11	12	40	BM-Sa2(D)	47	40	48	1
2023	04	11	13	34	TP-Sa1	48	40	48	1
2023	04	11	13	33	TP-Sa2	49	40	48	1

General Chemistry

Sample Number	Alkalinity	Conductivity	pH	Turbidity	Chloride	TOC-440	SSC	TDS	Total Solids	% Solids	TNVSS	TSS	Ash free dry weight	TOC	DOC	BOD5	Oil & Grease	Ammonia	Nitrite/Nitrate	Orthophosphate	Total Phosphorus	TPN	Chlorophyll	Chlorophyll filter
45																								
46																								
47																								
48																								
49																								

Micro; Metals (List individual metals and/or request MS/MSD in comments)

Sample Number	Fecal Coliform MF	Fecal Coliform MPN	E. coli MF	E. coli MPN	Total Metals	Dissolved Metals	Hardness	PP Metals -13 metals	Mercury (Hg)	Hg LL 1631e
45										
46										
47										
48										
49										

Organics (Request MS/MSD and/or dup in comments)

Sample Number	BTEX	TPHG	TPHD	VOA	PCB-Aroclors	PCB-Cong HRMS-CX	Herbicides	PESTMS	Carbamates	PBDE	BNA	PAH	PAH/Phthalates	PAH-SIM	PFAS
45				X											
46				X											
47				X											
48				X											
49				X											

Chain of Custody Record

Relinquished By	Received By	Year	Month	Day	Hour	Min	Tag # or Seal ID	Seal Condition	Locker #	Cooler Temp °C
[signature]	Brooke [illegible]	23	04	12	11	00	No Seal			2.3

Project Officer: Rachel Caron

Phone Number: 509-907-1353

Sampler: [signature]

Sampler: JWR

Recorder: JWR

Comments

Requesting DDT/DDE/DDD on 14 day TAT

Metals Arsenic Cadmium Silver Chromium Selenium Barium Lead

Washington State Department of Ecology
Manchester Environmental Laboratory
Cooler Receipt and Preservation Form

Project Name: LCB Sampling
# of coolers: 3
WO#: 2304065

Delivered by (circle): FedEx UPS MEL-Courier Client Other Describe if "other": ____

For any parameters out of compliance, list affected samples in table on next page.

(Cooler temperature MUST be measured upon opening)

Temperature of each cooler (criterion: ≤6°C or ≤10°C for microbiology samples, only.) 2°c, 2°c, 3°c

Did cooler(s) arrive at the proper temperature? Yes No N/A
If "No", list samples affected on Page 2.

Receipt at MEL
Date and time:
4/12/23 11:00

Signature: BJR

Were all samples removed?

Yes No If so; List analyses removed: ____

Remainder of samples unloaded by someone else?
Yes No NA
If yes, sign and date
Date and time:
__/__/__ __:__

Signature: ____

Check:

		Yes	No	NA
1a.	Are Custody Seal(s) Present?	Yes	No	
1b.	If so, are Custody Seal(s) Intact?	Yes	No	NA
2.	Was COC present, correct, and complete?	Yes	No	
3.	Was chain-of-custody record properly filled out (complete, in ink, signed, etc.)?	Yes	No	
4.	Did all bottles arrive in good condition (unbroken, no leakage)?	Yes	No	
5.	Do sample tags on bottles match the COC paperwork?	Yes	No	
6.	Were all sample labels complete (i.e.: analysis, sample date, etc.)?	Yes	No	
7.	Were the samples in correct container for analysis?	Yes	No	
8.	Were the samples(VOA, TPHG, CARBs checked by analyst) preserved to the proper pH?	Yes	No	NA
9.	Did all samples arrive within holding time?	Yes	No	
10.	Did all samples arrive with more than ½ of the hold time left for analysis?	Yes	No	

11. If "No", was the analyst notified? Yes No If so, who? ____
(at a minimum, record initials of analyst)

12. Were VOA/TPHG vials received without bubbles/headspace? Yes No NA
(Write "HS" on container if bubble size exceeds 6 mm.)

Headspace → "hs" (> 6 mm) ●

Did you contact the project officer for any problems? Yes No NA
(Include details on next page.)

Washington State Department of Ecology
Manchester Environmental Laboratory
Cooler Receipt and Preservation Form

WO#: 2304065

Receipt date and time: 4/12/23 11:00
TBR

How were discrepancies resolved?

List any discrepancies and their resolution below.

Sample numbers	Analysis	Comments
01-32	Herbicides	Analysis was incorrectly included on COC.
24, 25	PEST2PCB	Field ID's were incorrect on sample lids, but correct on sample tags.

Other notes of clarification from project officer and/or analysts.

Appendix C

PEST2PCB Analytical Results

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

Case Narrative

May 16, 2023

To: Caron, Rachel

Project: LCB Sampling

Work Order: 2304065

Subject: Chlorinated Pesticides & Polychlorinated Biphenyls

From: Myrna Mandjikov

Sample Receipt

Enclosed are the PEST2PCB results for the samples received by MEL on April 12, 2023. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

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

- extracted following a modification of method SW3541.
- cleaned up following a modification of method(s) SW3620C, SW3660B, SW3665A, .
- analyzed following a modification of method SW8081B8082A.

Analyst Comments

Pesticides and PCBs by GC-ECD.   Samples for Pesticides and PCBs via 8081 and 8082 are typically separated with Florisil into 2 fractions due to co-elutions. Because large amounts of DDE, DDD, and DDT were found, multiple dilutions were required for both fractions in many of the samples. The concentrations of these fractions were summed for the final result. Due to both fractions needing different dilutions, the dilution factors were not reported in the final report but the LLOQs were adjusted reflecting the highest dilution.

Sample Qualification

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

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendix D. All analytes met linearity requirements unless noted in Appendix E.

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: KJ-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.009 g
Final Vol: 1 mL

Lab ID #: 2304065-01
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 79.57%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**4.58**	1		**0.16**
72-55-9	**4,4'-DDE**	**1280**	1		**15.7**
50-29-3	**4,4'-DDT**	**119**	1		**15.7**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.63	1	U	0.63
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.24	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.14	1	U	3.14
11104-28-2	PCB-aroclor-1221	3.14	1	U	3.14
11141-16-5	PCB-aroclor-1232	3.14	1	U	3.14
53469-21-9	PCB-aroclor-1242	3.14	1	U	3.14
12672-29-6	PCB-aroclor-1248	1.57	1	U	1.57
11097-69-1	PCB-aroclor-1254	1.57	1	U	1.57
11096-82-5	PCB-aroclor-1260	1.57	1	U	1.57
37324-23-5	PCB-aroclor-1262	1.57	1	U	1.57
11100-14-4	PCB-aroclor-1268	1.57	1	U	1.57
8001-35-2	Toxaphene	1.57	1	U	1.57
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.01	6.28	96	30-130
877-09-8	Tetrachloro-m-xylene	5.73	6.28	91	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: KJ-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.009 g
Final Vol: 1 mL

Lab ID #: 2304065-01RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 79.57%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: KJ-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.009 g
Final Vol: 1 mL

Lab ID #: 2304065-01RE2
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 79.57%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**0.43**	1		**0.16**
959-98-8	Endosulfan I	0.16	1	U	0.16
33213-65-9	Endosulfan II	0.16	1	U	0.16
1031-07-8	Endosulfan Sulfate	0.16	1	U	0.16
72-20-8	**Endrin**	**2.50**	1		**0.16**
7421-93-4	Endrin Aldehyde	0.31	1	UJ	0.31
53494-70-5	**Endrin Ketone**	**2.67**	1		**0.16**
1024-57-3	Heptachlor Epoxide	0.16	1	U	0.16
72-43-5	Methoxychlor	0.31	1	U	0.31

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	6.84	6.28	109	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: KJ-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.066 g
Final Vol: 1 mL

Lab ID #: 2304065-02
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.46%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**10.0**	1		**0.16**
72-55-9	**4,4'-DDE**	**1610**	1		**159**
50-29-3	**4,4'-DDT**	**424**	1		**159**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.64	1	U	0.64
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.37	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.18	1	U	3.18
11104-28-2	PCB-aroclor-1221	3.18	1	U	3.18
11141-16-5	PCB-aroclor-1232	3.18	1	U	3.18
53469-21-9	PCB-aroclor-1242	3.18	1	U	3.18
12672-29-6	PCB-aroclor-1248	1.59	1	U	1.59
11097-69-1	PCB-aroclor-1254	1.59	1	U	1.59
11096-82-5	PCB-aroclor-1260	1.59	1	U	1.59
37324-23-5	PCB-aroclor-1262	1.59	1	U	1.59
11100-14-4	PCB-aroclor-1268	1.59	1	U	1.59
8001-35-2	Toxaphene	1.59	1	U	1.59
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.15	6.35	97	30-130
877-09-8	Tetrachloro-m-xylene	5.76	6.35	91	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: KJ-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.066 g
Final Vol: 1 mL

Lab ID #: 2304065-02RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.46%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	**Beta-BHC**	**0.53**	1		**0.16**
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: KJ-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.066 g
Final Vol: 1 mL

Lab ID #: 2304065-02RE2
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.46%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**0.78**	1		**0.16**
959-98-8	Endosulfan I	0.16	1	U	0.16
33213-65-9	**Endosulfan II**	**0.22**	1	**J**	**0.16**
1031-07-8	Endosulfan Sulfate	0.16	1	U	0.16
72-20-8	**Endrin**	**2.01**	1		**0.16**
7421-93-4	Endrin Aldehyde	0.32	1	UJ	0.32
53494-70-5	**Endrin Ketone**	**1.48**	1	**J**	**0.16**
1024-57-3	Heptachlor Epoxide	0.16	1	U	0.16
72-43-5	Methoxychlor	0.32	1	U	0.32

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	7.28	6.35	115	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: HE-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.205 g
Final Vol: 1 mL

Lab ID #: 2304065-04
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 85.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**1.52**	1		**0.14**
72-55-9	**4,4'-DDE**	**154**	1		**2.90**
50-29-3	**4,4'-DDT**	**56.8**	1		**23.2**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.58	1	U	0.58
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.22	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.90	1	U	2.90
11104-28-2	PCB-aroclor-1221	2.90	1	U	2.90
11141-16-5	PCB-aroclor-1232	2.90	1	U	2.90
53469-21-9	PCB-aroclor-1242	2.90	1	U	2.90
12672-29-6	PCB-aroclor-1248	1.45	1	U	1.45
11097-69-1	PCB-aroclor-1254	1.45	1	U	1.45
11096-82-5	PCB-aroclor-1260	1.45	1	U	1.45
37324-23-5	PCB-aroclor-1262	1.45	1	U	1.45
11100-14-4	PCB-aroclor-1268	1.45	1	U	1.45
8001-35-2	Toxaphene	2.90	1	U	1.45
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.47	5.80	94	30-130
877-09-8	Tetrachloro-m-xylene	5.38	5.80	93	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: HE-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.205 g
Final Vol: 1 mL

Lab ID #: 2304065-04RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 85.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling **Field ID: HE-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.205 g
Final Vol: 1 mL

Lab ID #: 2304065-04RE2
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 85.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**0.18**	1	**J**	**0.14**
959-98-8	**Endosulfan I**	**0.38**	1		**0.14**
33213-65-9	**Endosulfan II**	**0.52**	1		**0.14**
1031-07-8	**Endosulfan Sulfate**	**0.15**	1	**J**	**0.14**
72-20-8	**Endrin**	**0.80**	1		**0.14**
7421-93-4	Endrin Aldehyde	0.29	1	UJ	0.29
53494-70-5	**Endrin Ketone**	**2.92**	1		**0.14**
1024-57-3	Heptachlor Epoxide	0.14	1	U	0.14
72-43-5	Methoxychlor	0.29	1	U	0.29

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.79	5.80	100	20-130

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Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.007 g
Final Vol: 1 mL

Lab ID #: 2304065-05
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.18%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**1.04**	1		**0.14**
72-55-9	**4,4'-DDE**	**116**	1		**2.90**
50-29-3	**4,4'-DDT**	**33.9**	1		**11.6**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.58	1	U	0.58
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.36	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.90	1	U	2.90
11104-28-2	PCB-aroclor-1221	2.90	1	U	2.90
11141-16-5	PCB-aroclor-1232	2.90	1	U	2.90
53469-21-9	PCB-aroclor-1242	2.90	1	U	2.90
12672-29-6	PCB-aroclor-1248	1.45	1	U	1.45
11097-69-1	PCB-aroclor-1254	1.45	1	U	1.45
11096-82-5	PCB-aroclor-1260	1.45	1	U	1.45
37324-23-5	PCB-aroclor-1262	1.45	1	U	1.45
11100-14-4	PCB-aroclor-1268	1.45	1	U	1.45
8001-35-2	Toxaphene	2.90	1	U	1.45
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.14	5.80	106	30-130
877-09-8	Tetrachloro-m-xylene	6.05	5.80	104	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.007 g
Final Vol: 1 mL

Lab ID #: 2304065-05RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.18%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.007 g
Final Vol: 1 mL

Lab ID #: 2304065-05RE2
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.18%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**0.51**	1		**0.14**
959-98-8	**Endosulfan I**	**0.52**	1		**0.14**
33213-65-9	**Endosulfan II**	**0.69**	1		**0.14**
1031-07-8	Endosulfan Sulfate	0.14	1	U	0.14
72-20-8	**Endrin**	**0.50**	1		**0.14**
7421-93-4	Endrin Aldehyde	0.29	1	UJ	0.29
53494-70-5	**Endrin Ketone**	**0.86**	1	**J**	**0.14**
1024-57-3	Heptachlor Epoxide	0.14	1	U	0.14
72-43-5	Methoxychlor	0.29	1	U	0.29

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	6.96	5.80	120	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: B-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.396 g
Final Vol: 1 mL

Lab ID #: 2304065-07
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.85%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**0.68**	1		**0.30**
72-55-9	**4,4'-DDE**	**13.2**	1		**0.30**
50-29-3	**4,4'-DDT**	**5.04**	1		**0.30**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.61	1	U	0.61
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.65	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.03	1	U	3.03
11104-28-2	PCB-aroclor-1221	3.03	1	U	3.03
11141-16-5	PCB-aroclor-1232	3.03	1	U	3.03
53469-21-9	PCB-aroclor-1242	3.03	1	U	3.03
12672-29-6	PCB-aroclor-1248	1.52	1	U	1.52
11097-69-1	PCB-aroclor-1254	1.52	1	U	1.52
11096-82-5	PCB-aroclor-1260	1.52	1	U	1.52
37324-23-5	PCB-aroclor-1262	1.52	1	U	1.52
11100-14-4	PCB-aroclor-1268	1.52	1	U	1.52
8001-35-2	Toxaphene	1.52	1	U	1.52
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.46	6.06	106	30-130
877-09-8	Tetrachloro-m-xylene	6.15	6.06	101	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: B-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.396 g
Final Vol: 1 mL

Lab ID #: 2304065-07RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.85%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

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Project: LCB Sampling **Field ID: B-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.396 g
Final Vol: 1 mL

Lab ID #: 2304065-07RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.85%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.52	10	U	1.52
959-98-8	Endosulfan I	1.52	10	U	1.52
33213-65-9	Endosulfan II	1.52	10	U	1.52
1031-07-8	Endosulfan Sulfate	1.52	10	U	1.52
72-20-8	Endrin	1.52	10	U	1.52
7421-93-4	Endrin Aldehyde	3.03	10	UJ	3.03
53494-70-5	Endrin Ketone	1.52	10	U	1.52
1024-57-3	Heptachlor Epoxide	1.52	10	U	1.52
72-43-5	Methoxychlor	3.03	10	U	3.03

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	6.31	6.06	104	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling | Field ID: B-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.016 g
Final Vol: 1 mL

Lab ID #: 2304065-08
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.92%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**0.35**	1		**0.16**
72-55-9	**4,4'-DDE**	**7.72**	1		**0.16**
50-29-3	**4,4'-DDT**	**7.03**	1		**0.16**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.63	1	U	0.63
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.70	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.17	1	U	3.17
11104-28-2	PCB-aroclor-1221	3.17	1	U	3.17
11141-16-5	PCB-aroclor-1232	3.17	1	U	3.17
53469-21-9	PCB-aroclor-1242	3.17	1	U	3.17
12672-29-6	PCB-aroclor-1248	1.58	1	U	1.58
11097-69-1	PCB-aroclor-1254	1.58	1	U	1.58
11096-82-5	PCB-aroclor-1260	1.58	1	U	1.58
37324-23-5	PCB-aroclor-1262	1.58	1	U	1.58
11100-14-4	PCB-aroclor-1268	1.58	1	U	1.58
8001-35-2	Toxaphene	3.17	1	U	1.58
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.98	6.33	94	30-130
877-09-8	Tetrachloro-m-xylene	5.77	6.33	91	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: B-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.016 g
Final Vol: 1 mL

Lab ID #: 2304065-08RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.92%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

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Project: LCB Sampling **Field ID: B-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.016 g
Final Vol: 1 mL

Lab ID #: 2304065-08RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.92%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.58	10	U	1.58
959-98-8	Endosulfan I	1.58	10	U	1.58
33213-65-9	Endosulfan II	1.58	10	U	1.58
1031-07-8	Endosulfan Sulfate	1.58	10	U	1.58
72-20-8	Endrin	1.58	10	U	1.58
7421-93-4	Endrin Aldehyde	3.17	10	UJ	3.17
53494-70-5	Endrin Ketone	1.58	10	U	1.58
1024-57-3	Heptachlor Epoxide	1.58	10	U	1.58
72-43-5	Methoxychlor	3.17	10	U	3.17

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	7.20	6.33	114	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: OG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.069 g
Final Vol: 1 mL

Lab ID #: 2304065-09
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.19%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**0.21**	1		**0.14**
72-55-9	**4,4'-DDE**	**8.47**	1		**0.14**
50-29-3	**4,4'-DDT**	**3.73**	1		**0.14**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.26	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.82	1	U	2.82
11104-28-2	PCB-aroclor-1221	2.82	1	U	2.82
11141-16-5	PCB-aroclor-1232	2.82	1	U	2.82
53469-21-9	PCB-aroclor-1242	2.82	1	U	2.82
12672-29-6	PCB-aroclor-1248	1.41	1	U	1.41
11097-69-1	PCB-aroclor-1254	1.41	1	U	1.41
11096-82-5	PCB-aroclor-1260	1.41	1	U	1.41
37324-23-5	PCB-aroclor-1262	1.41	1	U	1.41
11100-14-4	PCB-aroclor-1268	1.41	1	U	1.41
8001-35-2	Toxaphene	5.65	1	U	1.41
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.94	5.65	105	30-130
877-09-8	Tetrachloro-m-xylene	5.92	5.65	105	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: OG-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.069 g
Final Vol: 1 mL

Lab ID #: 2304065-09RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.19%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: OG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.069 g
Final Vol: 1 mL

Lab ID #: 2304065-09RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.19%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.41	10	U	1.41
959-98-8	Endosulfan I	1.41	10	U	1.41
33213-65-9	Endosulfan II	1.41	10	U	1.41
1031-07-8	Endosulfan Sulfate	1.41	10	U	1.41
72-20-8	Endrin	1.41	10	U	1.41
7421-93-4	Endrin Aldehyde	2.82	10	UJ	2.82
53494-70-5	Endrin Ketone	1.41	10	U	1.41
1024-57-3	Heptachlor Epoxide	1.41	10	U	1.41
72-43-5	Methoxychlor	2.82	10	U	2.82

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.52	5.65	98	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: OG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.036 g
Final Vol: 1 mL

Lab ID #: 2304065-10
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.76%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**0.39**	1		**0.29**
72-55-9	**4,4'-DDE**	**10.4**	1		**0.29**
50-29-3	**4,4'-DDT**	**5.58**	1		**0.29**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.58	1	U	0.58
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.86	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.88	1	U	2.88
11104-28-2	PCB-aroclor-1221	2.88	1	U	2.88
11141-16-5	PCB-aroclor-1232	2.88	1	U	2.88
53469-21-9	PCB-aroclor-1242	2.88	1	U	2.88
12672-29-6	PCB-aroclor-1248	1.44	1	U	1.44
11097-69-1	PCB-aroclor-1254	1.44	1	U	1.44
11096-82-5	PCB-aroclor-1260	1.44	1	U	1.44
37324-23-5	PCB-aroclor-1262	1.44	1	U	1.44
11100-14-4	PCB-aroclor-1268	1.44	1	U	1.44
8001-35-2	Toxaphene	5.75	1	U	1.44
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.13	5.75	107	30-130
877-09-8	Tetrachloro-m-xylene	6.02	5.75	105	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: OG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.036 g
Final Vol: 1 mL

Lab ID #: 2304065-10RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.76%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: OG-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.036 g
Final Vol: 1 mL

Lab ID #: 2304065-10RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.76%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.44	10	U	1.44
959-98-8	Endosulfan I	1.44	10	U	1.44
33213-65-9	Endosulfan II	1.44	10	U	1.44
1031-07-8	Endosulfan Sulfate	1.44	10	U	1.44
72-20-8	Endrin	1.44	10	U	1.44
7421-93-4	Endrin Aldehyde	2.88	10	UJ	2.88
53494-70-5	Endrin Ketone	1.44	10	U	1.44
1024-57-3	Heptachlor Epoxide	1.44	10	U	1.44
72-43-5	Methoxychlor	2.88	10	U	2.88

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.89	5.75	102	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: T-SA1

Work Order: 2304065	**Lab ID #: 2304065-11**	**Batch ID: B23D077**
Project Officer: Caron, Rachel	**Collected: 4/11/2023**	**Prepared: 4/13/2023**
Initial Vol: 20.378 g	**Prep Method: SW3541**	**Analyzed: 4/18/2023**
Final Vol: 1 mL	**Analysis Method: SW8081B8082A**	**Matrix: Sediment/Soil**
	% Solids: 78.22%	**Units: ug/Kg dw**

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**2.57**	1		**1.57**
72-55-9	**4,4'-DDE**	**65.2**	1		**1.57**
50-29-3	**4,4'-DDT**	**35.6**	1		**1.57**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.63	1	U	0.63
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.75	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.14	1	U	3.14
11104-28-2	PCB-aroclor-1221	3.14	1	U	3.14
11141-16-5	PCB-aroclor-1232	3.14	1	U	3.14
53469-21-9	PCB-aroclor-1242	3.14	1	U	3.14
12672-29-6	PCB-aroclor-1248	1.57	1	U	1.57
11097-69-1	PCB-aroclor-1254	1.57	1	U	1.57
11096-82-5	PCB-aroclor-1260	1.57	1	U	1.57
37324-23-5	PCB-aroclor-1262	1.57	1	U	1.57
11100-14-4	PCB-aroclor-1268	1.57	1	U	1.57
8001-35-2	Toxaphene	6.27	1	U	1.57
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.04	6.27	96	30-130
877-09-8	Tetrachloro-m-xylene	5.90	6.27	94	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling

Field ID: T-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.378 g
Final Vol: 1 mL

Lab ID #: 2304065-11RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.22%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: T-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.378 g
Final Vol: 1 mL

Lab ID #: 2304065-11RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 78.22%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.57	10	U	1.57
959-98-8	Endosulfan I	1.57	10	U	1.57
33213-65-9	Endosulfan II	1.57	10	U	1.57
1031-07-8	Endosulfan Sulfate	1.57	10	U	1.57
72-20-8	**Endrin**	**2.70**	10		**1.57**
7421-93-4	Endrin Aldehyde	3.14	10	UJ	3.14
53494-70-5	**Endrin Ketone**	**9.60**	10		**1.57**
1024-57-3	Heptachlor Epoxide	1.57	10	U	1.57
72-43-5	Methoxychlor	3.14	10	U	3.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	8.08	6.27	129	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: T-SA2**

Work Order: 2304065	**Lab ID #: 2304065-12**	**Batch ID: B23D077**
Project Officer: Caron, Rachel	**Collected: 4/11/2023**	**Prepared: 4/13/2023**
Initial Vol: 20.368 g	**Prep Method: SW3541**	**Analyzed: 4/18/2023**
Final Vol: 1 mL	**Analysis Method: SW8081B8082A**	**Matrix: Sediment/Soil**
	% Solids: 77.06%	**Units: ug/Kg dw**

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**0.62**	1		**0.32**
72-55-9	**4,4'-DDE**	**19.1**	1		**0.32**
50-29-3	**4,4'-DDT**	**10.6**	1		**0.32**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.64	1	U	0.64
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.63	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.19	1	U	3.19
11104-28-2	PCB-aroclor-1221	3.19	1	U	3.19
11141-16-5	PCB-aroclor-1232	3.19	1	U	3.19
53469-21-9	PCB-aroclor-1242	3.19	1	U	3.19
12672-29-6	PCB-aroclor-1248	1.59	1	U	1.59
11097-69-1	PCB-aroclor-1254	1.59	1	U	1.59
11096-82-5	PCB-aroclor-1260	1.59	1	U	1.59
37324-23-5	PCB-aroclor-1262	1.59	1	U	1.59
11100-14-4	PCB-aroclor-1268	1.59	1	U	1.59
8001-35-2	Toxaphene	6.37	1	U	1.59
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.43	6.37	101	30-130
877-09-8	Tetrachloro-m-xylene	6.14	6.37	96	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: T-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.368 g
Final Vol: 1 mL

Lab ID #: 2304065-12RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 77.06%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: T-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.368 g
Final Vol: 1 mL

Lab ID #: 2304065-12RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 77.06%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.59	10	U	1.59
959-98-8	Endosulfan I	1.59	10	U	1.59
33213-65-9	Endosulfan II	1.59	10	U	1.59
1031-07-8	Endosulfan Sulfate	1.59	10	U	1.59
72-20-8	Endrin	1.59	10	U	1.59
7421-93-4	Endrin Aldehyde	3.19	10	UJ	3.19
53494-70-5	Endrin Ketone	1.59	10	U	1.59
1024-57-3	Heptachlor Epoxide	1.59	10	U	1.59
72-43-5	Methoxychlor	3.19	10	U	3.19

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	6.35	6.37	100	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: TP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.268 g
Final Vol: 1 mL

Lab ID #: 2304065-13
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.61%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**27.5**	1		**0.70**
72-55-9	**4,4'-DDE**	**1540**	1		**139**
50-29-3	**4,4'-DDT**	**1680**	1		**139**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.40	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.78	1	U	2.78
11104-28-2	PCB-aroclor-1221	2.78	1	U	2.78
11141-16-5	PCB-aroclor-1232	2.78	1	U	2.78
53469-21-9	PCB-aroclor-1242	2.78	1	U	2.78
12672-29-6	PCB-aroclor-1248	1.39	1	U	1.39
11097-69-1	PCB-aroclor-1254	1.39	1	U	1.39
11096-82-5	PCB-aroclor-1260	1.39	1	U	1.39
37324-23-5	PCB-aroclor-1262	1.39	1	U	1.39
11100-14-4	PCB-aroclor-1268	1.39	1	U	1.39
8001-35-2	Toxaphene	5.57	1	U	1.39
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.97	5.57	107	30-130
877-09-8	Tetrachloro-m-xylene	5.33	5.57	96	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling

Field ID: TP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.268 g
Final Vol: 1 mL

Lab ID #: 2304065-13RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.61%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: TP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.268 g
Final Vol: 1 mL

Lab ID #: 2304065-13RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.61%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**1.66**	10	**J**	**1.39**
959-98-8	Endosulfan I	1.39	10	U	1.39
33213-65-9	Endosulfan II	1.39	10	U	1.39
1031-07-8	Endosulfan Sulfate	1.39	10	U	1.39
72-20-8	**Endrin**	**7.29**	10	**J**	**1.39**
7421-93-4	Endrin Aldehyde	2.78	10	UJ	2.78
53494-70-5	**Endrin Ketone**	**3.01**	10	**J**	**1.39**
1024-57-3	Heptachlor Epoxide	1.39	10	U	1.39
72-43-5	Methoxychlor	2.78	10	U	2.78

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*8.27*	*5.57*	*149*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: TP-SA2**

Work Order: 2304065	**Lab ID #: 2304065-14**	**Batch ID: B23D077**
Project Officer: Caron, Rachel	**Collected: 4/11/2023**	**Prepared: 4/13/2023**
Initial Vol: 20.043 g	**Prep Method: SW3541**	**Analyzed: 4/18/2023**
Final Vol: 1 mL	**Analysis Method: SW8081B8082A**	**Matrix: Sediment/Soil**
	% Solids: 88.79%	**Units: ug/Kg dw**

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**62.1**	1		**14.0**
72-55-9	**4,4'-DDE**	**2840**	1		**140**
50-29-3	**4,4'-DDT**	**3070**	1		**140**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.51	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.81	1	U	2.81
11104-28-2	PCB-aroclor-1221	2.81	1	U	2.81
11141-16-5	PCB-aroclor-1232	2.81	1	U	2.81
53469-21-9	PCB-aroclor-1242	2.81	1	U	2.81
12672-29-6	PCB-aroclor-1248	1.40	1	U	1.40
11097-69-1	PCB-aroclor-1254	1.40	1	U	1.40
11096-82-5	PCB-aroclor-1260	1.40	1	U	1.40
37324-23-5	PCB-aroclor-1262	1.40	1	U	1.40
11100-14-4	PCB-aroclor-1268	1.40	1	U	1.40
8001-35-2	Toxaphene	5.62	1	U	1.40
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.17	5.62	110	30-130
877-09-8	Tetrachloro-m-xylene	5.42	5.62	96	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: TP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.043 g
Final Vol: 1 mL

Lab ID #: 2304065-14RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.79%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling **Field ID: TP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.043 g
Final Vol: 1 mL

Lab ID #: 2304065-14RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.79%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.40	10	U	1.40
959-98-8	Endosulfan I	1.40	10	U	1.40
33213-65-9	Endosulfan II	1.40	10	U	1.40
1031-07-8	Endosulfan Sulfate	1.40	10	U	1.40
72-20-8	Endrin	1.40	10	U	1.40
7421-93-4	Endrin Aldehyde	2.81	10	UJ	2.81
53494-70-5	Endrin Ketone	1.40	10	U	1.40
1024-57-3	Heptachlor Epoxide	1.40	10	U	1.40
72-43-5	Methoxychlor	2.81	10	U	2.81

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*7.34*	*5.62*	*131*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: BM-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.041 g
Final Vol: 1 mL

Lab ID #: 2304065-15
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**1.48**	1		**0.14**
72-55-9	**4,4'-DDE**	**117**	1		**2.82**
50-29-3	**4,4'-DDT**	**36.9**	1		**2.82**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.59	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.82	1	U	2.82
11104-28-2	PCB-aroclor-1221	2.82	1	U	2.82
11141-16-5	PCB-aroclor-1232	2.82	1	U	2.82
53469-21-9	PCB-aroclor-1242	2.82	1	U	2.82
12672-29-6	PCB-aroclor-1248	1.41	1	U	1.41
11097-69-1	PCB-aroclor-1254	1.41	1	U	1.41
11096-82-5	PCB-aroclor-1260	1.41	1	U	1.41
37324-23-5	PCB-aroclor-1262	1.41	1	U	1.41
11100-14-4	PCB-aroclor-1268	1.41	1	U	1.41
8001-35-2	Toxaphene	5.65	1	U	1.41
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.66	5.65	100	30-130
877-09-8	Tetrachloro-m-xylene	5.17	5.65	92	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: BM-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.041 g
Final Vol: 1 mL

Lab ID #: 2304065-15RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling | **Field ID: BM-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.041 g
Final Vol: 1 mL

Lab ID #: 2304065-15RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 88.35%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.41	10	U	1.41
959-98-8	Endosulfan I	1.41	10	U	1.41
33213-65-9	Endosulfan II	1.41	10	U	1.41
1031-07-8	Endosulfan Sulfate	1.41	10	U	1.41
72-20-8	Endrin	1.41	10	U	1.41
7421-93-4	Endrin Aldehyde	2.82	10	UJ	2.82
53494-70-5	**Endrin Ketone**	**2.12**	10		**1.41**
1024-57-3	Heptachlor Epoxide	1.41	10	U	1.41
72-43-5	Methoxychlor	2.82	10	U	2.82

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.10	5.65	73	20-130

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Project: LCB Sampling | **Field ID: BM-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.021 g
Final Vol: 1 mL

Lab ID #: 2304065-16
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.56%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**2.45**	1		**0.14**
72-55-9	**4,4'-DDE**	**184**	1		**7.21**
50-29-3	**4,4'-DDT**	**60.0**	1		**7.21**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.58	1	U	0.58
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.32	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.89	1	U	2.89
11104-28-2	PCB-aroclor-1221	2.89	1	U	2.89
11141-16-5	PCB-aroclor-1232	2.89	1	U	2.89
53469-21-9	PCB-aroclor-1242	2.89	1	U	2.89
12672-29-6	PCB-aroclor-1248	1.44	1	U	1.44
11097-69-1	PCB-aroclor-1254	1.44	1	U	1.44
11096-82-5	PCB-aroclor-1260	1.44	1	U	1.44
37324-23-5	PCB-aroclor-1262	1.44	1	U	1.44
11100-14-4	PCB-aroclor-1268	1.44	1	U	1.44
8001-35-2	Toxaphene	5.77	1	U	1.44
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.80	5.77	83	30-130
877-09-8	Tetrachloro-m-xylene	4.27	5.77	74	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling

Field ID: BM-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.021 g
Final Vol: 1 mL

Lab ID #: 2304065-16RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.56%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

Authorized by: Myrna Mandjikov

Release Date: 5/16/2023

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Project: LCB Sampling **Field ID: BM-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.021 g
Final Vol: 1 mL

Lab ID #: 2304065-16RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.56%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.44	10	U	1.44
959-98-8	Endosulfan I	1.44	10	U	1.44
33213-65-9	Endosulfan II	1.44	10	U	1.44
1031-07-8	Endosulfan Sulfate	1.44	10	U	1.44
72-20-8	Endrin	1.44	10	U	1.44
7421-93-4	Endrin Aldehyde	2.89	10	UJ	2.89
53494-70-5	Endrin Ketone	1.44	10	U	1.44
1024-57-3	Heptachlor Epoxide	1.44	10	U	1.44
72-43-5	Methoxychlor	2.89	10	U	2.89

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	7.05	5.77	122	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: BM-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.015 g
Final Vol: 1 mL

Lab ID #: 2304065-17
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.38%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**1.63**	1		**0.14**
72-55-9	**4,4'-DDE**	**191**	1		**7.15**
50-29-3	**4,4'-DDT**	**72.4**	1		**7.15**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.57	1	U	0.57
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.35	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.86	1	U	2.86
11104-28-2	PCB-aroclor-1221	2.86	1	U	2.86
11141-16-5	PCB-aroclor-1232	2.86	1	U	2.86
53469-21-9	PCB-aroclor-1242	2.86	1	U	2.86
12672-29-6	PCB-aroclor-1248	1.43	1	U	1.43
11097-69-1	PCB-aroclor-1254	1.43	1	U	1.43
11096-82-5	PCB-aroclor-1260	1.43	1	U	1.43
37324-23-5	PCB-aroclor-1262	1.43	1	U	1.43
11100-14-4	PCB-aroclor-1268	1.43	1	U	1.43
8001-35-2	Toxaphene	5.72	1	U	1.43
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.81	5.72	102	30-130
877-09-8	Tetrachloro-m-xylene	5.20	5.72	91	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: BM-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.015 g
Final Vol: 1 mL

Lab ID #: 2304065-17RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.38%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling — Field ID: BM-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.015 g
Final Vol: 1 mL

Lab ID #: 2304065-17RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.38%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.43	10	U	1.43
959-98-8	Endosulfan I	1.43	10	U	1.43
33213-65-9	Endosulfan II	1.43	10	U	1.43
1031-07-8	Endosulfan Sulfate	1.43	10	U	1.43
72-20-8	Endrin	1.43	10	U	1.43
7421-93-4	Endrin Aldehyde	2.86	10	UJ	2.86
53494-70-5	Endrin Ketone	1.43	10	U	1.43
1024-57-3	Heptachlor Epoxide	1.43	10	U	1.43
72-43-5	Methoxychlor	2.86	10	UJ	2.86

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*8.44*	*5.72*	*148*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: GG-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.222 g
Final Vol: 1 mL

Lab ID #: 2304065-18
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.51%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**6.39**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**2980**	1		**154**
50-29-3	**4,4'-DDT**	**383**	1	**J**	**154**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.61	1	U	0.61
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.67	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.07	1	U	3.07
11104-28-2	PCB-aroclor-1221	3.07	1	U	3.07
11141-16-5	PCB-aroclor-1232	3.07	1	U	3.07
53469-21-9	PCB-aroclor-1242	3.07	1	U	3.07
12672-29-6	PCB-aroclor-1248	1.54	1	U	1.54
11097-69-1	PCB-aroclor-1254	1.54	1	U	1.54
11096-82-5	PCB-aroclor-1260	1.54	1	U	1.54
37324-23-5	PCB-aroclor-1262	1.54	1	U	1.54
11100-14-4	PCB-aroclor-1268	1.54	1	U	1.54
8001-35-2	Toxaphene	6.14	1	U	1.54
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.95	6.14	81	30-130
877-09-8	Tetrachloro-m-xylene	4.51	6.14	73	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: GG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.222 g
Final Vol: 1 mL

Lab ID #: 2304065-18RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.51%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: GG-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.222 g
Final Vol: 1 mL

Lab ID #: 2304065-18RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.51%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.54	10	U	1.54
959-98-8	Endosulfan I	1.54	10	U	1.54
33213-65-9	Endosulfan II	1.54	10	U	1.54
1031-07-8	Endosulfan Sulfate	1.54	10	U	1.54
72-20-8	Endrin	1.54	10	U	1.54
7421-93-4	Endrin Aldehyde	3.07	10	UJ	3.07
53494-70-5	**Endrin Ketone**	**2.07**	10	**J**	**1.54**
1024-57-3	Heptachlor Epoxide	1.54	10	U	1.54
72-43-5	Methoxychlor	3.07	10	UJ	3.07

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*10.3*	*6.14*	*167*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: GG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.401 g
Final Vol: 1 mL

Lab ID #: 2304065-19
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.81%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**3.58**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**2290**	1		**152**
50-29-3	**4,4'-DDT**	**164**	1	**J**	**15.2**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.61	1	U	0.61
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.62	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.03	1	U	3.03
11104-28-2	PCB-aroclor-1221	3.03	1	U	3.03
11141-16-5	PCB-aroclor-1232	3.03	1	U	3.03
53469-21-9	PCB-aroclor-1242	3.03	1	U	3.03
12672-29-6	PCB-aroclor-1248	1.52	1	U	1.52
11097-69-1	PCB-aroclor-1254	1.52	1	U	1.52
11096-82-5	PCB-aroclor-1260	1.52	1	U	1.52
37324-23-5	PCB-aroclor-1262	1.52	1	U	1.52
11100-14-4	PCB-aroclor-1268	1.52	1	U	1.52
8001-35-2	Toxaphene	6.07	1	U	1.52
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.33	6.07	88	30-130
877-09-8	Tetrachloro-m-xylene	5.07	6.07	84	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: GG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.401 g
Final Vol: 1 mL

Lab ID #: 2304065-19RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.81%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

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Project: LCB Sampling | **Field ID: GG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.401 g
Final Vol: 1 mL

Lab ID #: 2304065-19RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.81%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.52	10	U	1.52
959-98-8	Endosulfan I	1.52	10	U	1.52
33213-65-9	Endosulfan II	1.52	10	U	1.52
1031-07-8	Endosulfan Sulfate	1.52	10	U	1.52
72-20-8	Endrin	1.52	10	U	1.52
7421-93-4	Endrin Aldehyde	3.03	10	UJ	3.03
53494-70-5	Endrin Ketone	1.52	10	U	1.52
1024-57-3	Heptachlor Epoxide	1.52	10	U	1.52
72-43-5	Methoxychlor	3.03	10	UJ	3.03

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*9.19*	*6.07*	*152*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling   Field ID: GRP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.269 g
Final Vol: 1 mL

Lab ID #: 2304065-20
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.33%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**30.2**	1	**J**	**1.41**
72-55-9	**4,4'-DDE**	**9380**	1		**141**
50-29-3	**4,4'-DDT**	**1960**	1		**141**
309-00-2	**Aldrin**	**0.29**	1		**0.14**
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.40	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.82	1	U	2.82
11104-28-2	PCB-aroclor-1221	2.82	1	U	2.82
11141-16-5	PCB-aroclor-1232	2.82	1	U	2.82
53469-21-9	PCB-aroclor-1242	2.82	1	U	2.82
12672-29-6	PCB-aroclor-1248	1.41	1	U	1.41
11097-69-1	PCB-aroclor-1254	1.41	1	U	1.41
11096-82-5	PCB-aroclor-1260	1.41	1	U	1.41
37324-23-5	PCB-aroclor-1262	1.41	1	U	1.41
11100-14-4	PCB-aroclor-1268	1.41	1	U	1.41
8001-35-2	Toxaphene	56.5	1	U	1.41
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.63	5.65	100	30-130
877-09-8	Tetrachloro-m-xylene	4.99	5.65	88	30-130

Authorized by: Myrna Mandjikov   **Release Date:** 5/16/2023

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Project: LCB Sampling

Field ID: GRP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.269 g
Final Vol: 1 mL

Lab ID #: 2304065-20RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.33%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling **Field ID: GRP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.269 g
Final Vol: 1 mL

Lab ID #: 2304065-20RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.33%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**38.2**	10		**1.41**
959-98-8	Endosulfan I	1.41	10	U	1.41
33213-65-9	Endosulfan II	1.41	10	U	1.41
1031-07-8	Endosulfan Sulfate	1.41	10	U	1.41
72-20-8	**Endrin**	**1.82**	10		**1.41**
7421-93-4	Endrin Aldehyde	2.82	10	UJ	2.82
53494-70-5	Endrin Ketone	1.41	10	U	1.41
1024-57-3	Heptachlor Epoxide	1.41	10	U	1.41
72-43-5	Methoxychlor	2.82	10	U	2.82

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	3.87	5.65	69	20-130

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Project: LCB Sampling **Field ID: GRP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.153 g
Final Vol: 1 mL

Lab ID #: 2304065-21
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.08%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**65.8**	1	**J**	**1.44**
72-55-9	**4,4'-DDE**	**20500**	1		**721**
50-29-3	**4,4'-DDT**	**5760**	1		**721**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.58	1	U	0.58
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.36	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.88	1	U	2.88
11104-28-2	PCB-aroclor-1221	2.88	1	U	2.88
11141-16-5	PCB-aroclor-1232	2.88	1	U	2.88
53469-21-9	PCB-aroclor-1242	2.88	1	U	2.88
12672-29-6	PCB-aroclor-1248	1.44	1	U	1.44
11097-69-1	PCB-aroclor-1254	1.44	1	U	1.44
11096-82-5	PCB-aroclor-1260	1.44	1	U	1.44
37324-23-5	PCB-aroclor-1262	1.44	1	U	1.44
11100-14-4	PCB-aroclor-1268	1.44	1	U	1.44
8001-35-2	Toxaphene	57.6	1	U	1.44
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.01	5.76	104	30-130
877-09-8	Tetrachloro-m-xylene	5.54	5.76	96	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: GRP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.153 g
Final Vol: 1 mL

Lab ID #: 2304065-21RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.08%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling | **Field ID: GRP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.153 g
Final Vol: 1 mL

Lab ID #: 2304065-21RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 86.08%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**27.3**	10		**1.44**
959-98-8	Endosulfan I	1.44	10	U	1.44
33213-65-9	Endosulfan II	1.44	10	U	1.44
1031-07-8	Endosulfan Sulfate	1.44	10	U	1.44
72-20-8	**Endrin**	**3.25**	10		**1.44**
7421-93-4	Endrin Aldehyde	2.88	10	UJ	2.88
53494-70-5	Endrin Ketone	1.44	10	U	1.44
1024-57-3	Heptachlor Epoxide	1.44	10	U	1.44
72-43-5	Methoxychlor	2.88	10	U	2.88

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.11	5.76	71	20-130

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Project: LCB Sampling — Field ID: EP-SA1

Work Order: 2304065	**Lab ID #: 2304065-22**	**Batch ID: B23D077**
Project Officer: Caron, Rachel	**Collected: 4/11/2023**	**Prepared: 4/13/2023**
Initial Vol: 20.093 g	**Prep Method: SW3541**	**Analyzed: 4/18/2023**
Final Vol: 1 mL	**Analysis Method: SW8081B8082A**	**Matrix: Sediment/Soil**
	% Solids: 82.88%	**Units: ug/Kg dw**

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**15.0**	1	**J**	**1.50**
72-55-9	**4,4'-DDE**	**4030**	1		**150**
50-29-3	**4,4'-DDT**	**701**	1		**150**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.60	1	U	0.60
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.56	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.00	1	U	3.00
11104-28-2	PCB-aroclor-1221	3.00	1	U	3.00
11141-16-5	PCB-aroclor-1232	3.00	1	U	3.00
53469-21-9	PCB-aroclor-1242	3.00	1	U	3.00
12672-29-6	PCB-aroclor-1248	1.50	1	U	1.50
11097-69-1	PCB-aroclor-1254	1.50	1	U	1.50
11096-82-5	PCB-aroclor-1260	1.50	1	U	1.50
37324-23-5	PCB-aroclor-1262	1.50	1	U	1.50
11100-14-4	PCB-aroclor-1268	1.50	1	U	1.50
8001-35-2	Toxaphene	30.0	1	U	1.50
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	7.00	6.00	117	30-130
877-09-8	Tetrachloro-m-xylene	6.33	6.00	105	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: EP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.093 g
Final Vol: 1 mL

Lab ID #: 2304065-22RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 82.88%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

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Project: LCB Sampling **Field ID: EP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.093 g
Final Vol: 1 mL

Lab ID #: 2304065-22RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 82.88%

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.50	10	U	1.50
959-98-8	Endosulfan I	1.50	10	U	1.50
33213-65-9	Endosulfan II	1.50	10	U	1.50
1031-07-8	Endosulfan Sulfate	1.50	10	U	1.50
72-20-8	Endrin	1.50	10	U	1.50
7421-93-4	Endrin Aldehyde	3.00	10	UJ	3.00
53494-70-5	Endrin Ketone	1.50	10	U	1.50
1024-57-3	Heptachlor Epoxide	1.50	10	U	1.50
72-43-5	Methoxychlor	3.00	10	UJ	3.00

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*12.1*	*6.00*	*201*	*20-130*

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Project: LCB Sampling — QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BLK1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BLK1

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
72-54-8	4,4'-DDD	0.12	U	0.12
72-55-9	4,4'-DDE	0.12	U	0.12
50-29-3	4,4'-DDT	0.12	U	0.12
309-00-2	Aldrin	0.12	U	0.12
319-84-6	Alpha-BHC	0.12	U	0.12
12789-03-6	Chlordane, technical	0.50	U	0.50
5103-71-9	cis-Chlordane	0.12	U	0.12
5103-73-1	Cis-Nonachlor	0.12	U	0.12
58-89-9	**Gamma-BHC**	**0.13**		**0.12**
76-44-8	Heptachlor	0.12	U	0.12
72-43-5	Methoxychlor	0.25	U	0.25
27304-13-8	Oxychlordane	0.12	U	0.12
12674-11-2	PCB-aroclor-1016	2.50	U	2.50
11104-28-2	PCB-aroclor-1221	2.50	U	2.50
11141-16-5	PCB-aroclor-1232	2.50	U	2.50
53469-21-9	PCB-aroclor-1242	2.50	U	2.50
12672-29-6	PCB-aroclor-1248	1.25	U	1.25
11097-69-1	PCB-aroclor-1254	1.25	U	1.25
11096-82-5	PCB-aroclor-1260	1.25	U	1.25
37324-23-5	PCB-aroclor-1262	1.25	U	1.25
11100-14-4	PCB-aroclor-1268	1.25	U	1.25
8001-35-2	Toxaphene	1.25	U	1.25
5103-74-2	trans-Chlordane	0.12	U	0.12

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.23	5.00	85	30-130
877-09-8	Tetrachloro-m-xylene	3.98	5.00	80	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : Method Blank**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BLK2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BLK2

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
319-85-7	Beta-BHC	0.12	U	0.12
319-86-8	Delta-BHC	0.12	U	0.12

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Project: LCB Sampling QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BLK3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BLK3

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
60-57-1	Dieldrin	0.12	U	0.12
959-98-8	Endosulfan I	0.12	U	0.12
33213-65-9	Endosulfan II	0.12	U	0.12
1031-07-8	Endosulfan Sulfate	0.12	UJ	0.12
72-20-8	Endrin	0.12	U	0.12
7421-93-4	Endrin Aldehyde	0.25	UJ	0.25
53494-70-5	Endrin Ketone	0.12	U	0.12
1024-57-3	Heptachlor Epoxide	0.12	U	0.12
72-43-5	Methoxychlor	0.25	U	0.25

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.75	5.00	95	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BS1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BS1

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
4,4'-DDD	5.57	5.00	0.12	111	50-150
4,4'-DDE	6.42	5.00	0.12	128	50-150
4,4'-DDT	5.99	5.00	0.12	120	50-150
Aldrin	4.66	5.00	0.12	93	50-150
Alpha-BHC	4.61	5.00	0.12	92	50-150
cis-Chlordane	5.10	5.00	0.12	102	50-150
Cis-Nonachlor	3.73	5.00	0.12	75	50-150
Gamma-BHC	5.12	5.00	0.12	102	50-150
Heptachlor	4.84	5.00	0.12	97	50-150
Oxychlordane	5.05	5.00	0.12	101	50-150
PCB-aroclor-1016	26.0	25.0	2.50	104	50-150
PCB-aroclor-1260	26.4	25.0	1.25	106	50-150
Toxaphene	28.2	25.0	1.25	113	50-150
trans-Chlordane	5.25	5.00	0.12	105	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.22	5.00	84	50-150
877-09-8	Tetrachloro-m-xylene	4.07	5.00	81	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BS2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BS2

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Beta-BHC	5.08	5.00	0.12	102	50-150
Delta-BHC	5.16	5.00	0.12	103	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — QC Type : LCS

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BS3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BS3

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Dieldrin	5.28	5.00	0.12	106	50-150
Endosulfan I	4.55	5.00	0.12	91	50-150
Endosulfan II	4.93	5.00	0.12	99	50-150
Endosulfan Sulfate	2.53	5.00	0.12	51	50-150
Endrin	4.81	5.00	0.12	96	50-150
Endrin Aldehyde	0.99	5.00	0.25	20	50-150
Endrin Ketone	5.06	5.00	0.12	101	50-150
Heptachlor Epoxide	3.45	5.00	0.12	69	50-150
Methoxychlor	6.30	5.00	0.25	126	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.28	5.00	106	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BSD1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BSD1

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
4,4'-DDD	5.91	5.00	118	6	50-150	40
4,4'-DDE	6.61	5.00	132	3	50-150	40
4,4'-DDT	6.03	5.00	121	0.6	50-150	40
Aldrin	4.69	5.00	94	0.8	50-150	40
Alpha-BHC	4.71	5.00	94	2	50-150	40
cis-Chlordane	5.25	5.00	105	3	50-150	40
Cis-Nonachlor	4.01	5.00	80	7	50-150	40
Gamma-BHC	5.28	5.00	106	3	50-150	40
Heptachlor	4.99	5.00	100	3	50-150	40
Oxychlordane	5.21	5.00	104	3	50-150	40
PCB-aroclor-1016	25.5	25.0	102	2	50-150	40
PCB-aroclor-1260	27.8	25.0	111	5	50-150	40
Toxaphene	30.7	25.0	123	9	50-150	40
trans-Chlordane	5.45	5.00	109	4	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.69	5.00	94	50-150
877-09-8	Tetrachloro-m-xylene	4.34	5.00	87	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BSD2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BSD2

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Beta-BHC	5.01	5.00	100	1	50-150	40
Delta-BHC	5.17	5.00	103	0.2	50-150	40

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D077-BSD3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-BSD3

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Dieldrin	5.35	5.00	107	1	50-150	40
Endosulfan I	5.07	5.00	101	11	50-150	40
Endosulfan II	5.18	5.00	104	5	50-150	40
Endosulfan Sulfate	2.60	5.00	52	2	50-150	40
Endrin	5.08	5.00	102	5	50-150	40
Endrin Aldehyde	1.11	5.00	22	11	50-150	40
Endrin Ketone	5.18	5.00	104	2	50-150	40
Heptachlor Epoxide	4.51	5.00	90	27	50-150	40
Methoxychlor	6.41	5.00	128	2	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.34	5.00	107	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — QC Type : Reference

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 2.013 g
Final Vol: 1 mL

Lab ID #: B23D077-SRM1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-SRM1

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/18/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
4,4'-DDD	**111**	**108**	**1.24**	**103**	63-137
4,4'-DDE	**115**	**86.0**	**1.24**	**133**	73-127
4,4'-DDT	**211**	**119**	**1.24**	**177**	24-176
Alpha-BHC	**1.55**	**2.00**	**1.24**	**78**	65-135
cis-Chlordane	**20.3**	**16.5**	**1.24**	**123**	45-155
Cis-Nonachlor	**4.84**	**3.70**	**1.24**	**131**	65-135
trans-Chlordane	**19.7**	**8.00**	**1.24**	**247**	-57-257

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	43.6	49.7	88	30-130
877-09-8	Tetrachloro-m-xylene	46.7	49.7	94	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : Reference**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 2.013 g
Final Vol: 1 mL

Lab ID #: B23D077-SRM2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D077-SRM2

Batch ID: B23D077
Prepared: 4/13/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	39.3	49.7	79	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: EP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.049 g
Final Vol: 1 mL

Lab ID #: 2304065-23
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 84.28%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**9.11**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**4790**	1		**148**
50-29-3	**4,4'-DDT**	**809**	1		**14.8**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.59	1	U	0.59
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.58	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	2.96	1	U	2.96
11104-28-2	PCB-aroclor-1221	2.96	1	U	2.96
11141-16-5	PCB-aroclor-1232	2.96	1	U	2.96
53469-21-9	PCB-aroclor-1242	2.96	1	U	2.96
12672-29-6	PCB-aroclor-1248	1.48	1	U	1.48
11097-69-1	PCB-aroclor-1254	1.48	1	U	1.48
11096-82-5	PCB-aroclor-1260	1.48	1	U	1.48
37324-23-5	PCB-aroclor-1262	1.48	1	U	1.48
11100-14-4	PCB-aroclor-1268	1.48	1	U	1.48
8001-35-2	Toxaphene	29.6	1	U	1.48
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.28	5.92	89	30-130
877-09-8	Tetrachloro-m-xylene	4.74	5.92	80	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling   Field ID: EP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.049 g
Final Vol: 1 mL

Lab ID #: 2304065-23RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 84.28%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

Authorized by: Myrna Mandjikov   **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: EP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.049 g
Final Vol: 1 mL

Lab ID #: 2304065-23RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 84.28%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.48	10	U	1.48
959-98-8	Endosulfan I	1.48	10	U	1.48
33213-65-9	Endosulfan II	1.48	10	U	1.48
1031-07-8	Endosulfan Sulfate	1.48	10	UJ	1.48
72-20-8	**Endrin**	**2.20**	10		**1.48**
7421-93-4	Endrin Aldehyde	2.96	10	UJ	2.96
53494-70-5	**Endrin Ketone**	**2.11**	10	**J**	**1.48**
1024-57-3	Heptachlor Epoxide	1.48	10	U	1.48
72-43-5	Methoxychlor	2.96	10	UJ	2.96

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	7.62	5.92	129	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: PSV-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.244 g
Final Vol: 1 mL

Lab ID #: 2304065-24
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 82.20%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**1.64**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**1170**	1		**15.0**
50-29-3	**4,4'-DDT**	**159**	1	**J**	**15.0**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.60	1	U	0.60
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.23	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.00	1	U	3.00
11104-28-2	PCB-aroclor-1221	3.00	1	U	3.00
11141-16-5	PCB-aroclor-1232	3.00	1	U	3.00
53469-21-9	PCB-aroclor-1242	3.00	1	U	3.00
12672-29-6	PCB-aroclor-1248	1.50	1	U	1.50
11097-69-1	PCB-aroclor-1254	1.50	1	U	1.50
11096-82-5	PCB-aroclor-1260	1.50	1	U	1.50
37324-23-5	PCB-aroclor-1262	1.50	1	U	1.50
11100-14-4	PCB-aroclor-1268	1.50	1	U	1.50
8001-35-2	Toxaphene	30.0	1	U	1.50
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.29	6.01	88	30-130
877-09-8	Tetrachloro-m-xylene	4.83	6.01	80	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling Field ID: PSV-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.244 g
Final Vol: 1 mL

Lab ID #: 2304065-24RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 82.20%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: PSV-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.244 g
Final Vol: 1 mL

Lab ID #: 2304065-24RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 82.20%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**3.95**	10	**J**	**1.50**
959-98-8	Endosulfan I	1.50	10	U	1.50
33213-65-9	Endosulfan II	1.50	10	U	1.50
1031-07-8	Endosulfan Sulfate	1.50	10	UJ	1.50
72-20-8	**Endrin**	**11.2**	10	**J**	**1.50**
7421-93-4	Endrin Aldehyde	3.00	10	UJ	3.00
53494-70-5	**Endrin Ketone**	**4.49**	10	**J**	**1.50**
1024-57-3	Heptachlor Epoxide	1.50	10	U	1.50
72-43-5	Methoxychlor	3.00	10	UJ	3.00

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*8.20*	*6.01*	*136*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: PSV-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.032 g
Final Vol: 1 mL

Lab ID #: 2304065-25
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 81.02%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**3.34**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**2210**	1		**154**
50-29-3	**4,4'-DDT**	**275**	1		**15.4**
309-00-2	**Aldrin**	**0.16**	1		**0.15**
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.62	1	U	0.62
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.19	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.08	1	U	3.08
11104-28-2	PCB-aroclor-1221	3.08	1	U	3.08
11141-16-5	PCB-aroclor-1232	3.08	1	U	3.08
53469-21-9	PCB-aroclor-1242	3.08	1	U	3.08
12672-29-6	PCB-aroclor-1248	1.54	1	U	1.54
11097-69-1	PCB-aroclor-1254	1.54	1	U	1.54
11096-82-5	PCB-aroclor-1260	1.54	1	U	1.54
37324-23-5	PCB-aroclor-1262	1.54	1	U	1.54
11100-14-4	PCB-aroclor-1268	1.54	1	U	1.54
8001-35-2	Toxaphene	30.8	1	U	1.54
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.38	6.16	87	30-130
877-09-8	Tetrachloro-m-xylene	4.75	6.16	77	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: PSV-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.032 g
Final Vol: 1 mL

Lab ID #: 2304065-25RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 81.02%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: PSV-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.032 g
Final Vol: 1 mL

Lab ID #: 2304065-25RE2
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 81.02%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**11.1**	1	**J**	**0.15**
959-98-8	Endosulfan I	0.15	1	U	0.15
33213-65-9	**Endosulfan II**	**0.96**	1	**J**	**0.15**
1031-07-8	Endosulfan Sulfate	0.35	1	U	0.15
72-20-8	**Endrin**	**2.21**	1	**J**	**0.15**
7421-93-4	Endrin Aldehyde	0.31	1	UJ	0.31
53494-70-5	**Endrin Ketone**	**3.17**	1	**J**	**0.15**
1024-57-3	Heptachlor Epoxide	0.15	1	U	0.15
72-43-5	Methoxychlor	1.22	1	U	0.31

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*9.16*	*6.16*	*149*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: SLS-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.197 g
Final Vol: 1 mL

Lab ID #: 2304065-26
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.78%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**5.21**	1	**J**	**0.15**
72-55-9	**4,4'-DDE**	**2220**	1		**153**
50-29-3	**4,4'-DDT**	**485**	1		**15.3**
309-00-2	Aldrin	0.15	1	U	0.15
319-84-6	Alpha-BHC	0.15	1	U	0.15
12789-03-6	Chlordane, technical	0.61	1	U	0.61
5103-71-9	cis-Chlordane	0.15	1	U	0.15
5103-73-1	Cis-Nonachlor	0.15	1	U	0.15
58-89-9	Gamma-BHC	0.23	1	U	0.15
76-44-8	Heptachlor	0.15	1	U	0.15
27304-13-8	Oxychlordane	0.15	1	U	0.15
12674-11-2	PCB-aroclor-1016	3.06	1	U	3.06
11104-28-2	PCB-aroclor-1221	3.06	1	U	3.06
11141-16-5	PCB-aroclor-1232	3.06	1	U	3.06
53469-21-9	PCB-aroclor-1242	3.06	1	U	3.06
12672-29-6	PCB-aroclor-1248	1.53	1	U	1.53
11097-69-1	PCB-aroclor-1254	1.53	1	U	1.53
11096-82-5	PCB-aroclor-1260	1.53	1	U	1.53
37324-23-5	PCB-aroclor-1262	1.53	1	U	1.53
11100-14-4	PCB-aroclor-1268	1.53	1	U	1.53
8001-35-2	Toxaphene	30.6	1	U	1.53
5103-74-2	trans-Chlordane	0.15	1	U	0.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.78	6.13	94	30-130
877-09-8	Tetrachloro-m-xylene	5.28	6.13	86	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: SLS-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.197 g
Final Vol: 1 mL

Lab ID #: 2304065-26RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.78%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.15	1	U	0.15
319-86-8	Delta-BHC	0.15	1	U	0.15

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: SLS-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.197 g
Final Vol: 1 mL

Lab ID #: 2304065-26RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.78%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.53	10	U	1.53
959-98-8	Endosulfan I	1.53	10	U	1.53
33213-65-9	Endosulfan II	1.53	10	U	1.53
1031-07-8	Endosulfan Sulfate	1.53	10	UJ	1.53
72-20-8	Endrin	1.53	10	U	1.53
7421-93-4	Endrin Aldehyde	3.06	10	UJ	3.06
53494-70-5	Endrin Ketone	1.53	10	U	1.53
1024-57-3	Heptachlor Epoxide	1.53	10	U	1.53
72-43-5	Methoxychlor	3.06	10	UJ	3.06

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*9.42*	*6.13*	*154*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling | **Field ID: SLS-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.103 g
Final Vol: 1 mL

Lab ID #: 2304065-27
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.05%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**6.59**	1	**J**	**0.16**
72-55-9	**4,4'-DDE**	**2750**	1		**155**
50-29-3	**4,4'-DDT**	**442**	1		**15.5**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.62	1	U	0.62
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.34	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.11	1	U	3.11
11104-28-2	PCB-aroclor-1221	3.11	1	U	3.11
11141-16-5	PCB-aroclor-1232	3.11	1	U	3.11
53469-21-9	PCB-aroclor-1242	3.11	1	U	3.11
12672-29-6	PCB-aroclor-1248	1.55	1	U	1.55
11097-69-1	PCB-aroclor-1254	1.55	1	U	1.55
11096-82-5	PCB-aroclor-1260	1.55	1	U	1.55
37324-23-5	PCB-aroclor-1262	1.55	1	U	1.55
11100-14-4	PCB-aroclor-1268	1.55	1	U	1.55
8001-35-2	Toxaphene	31.1	1	U	1.55
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.06	6.21	98	30-130
877-09-8	Tetrachloro-m-xylene	5.49	6.21	88	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: SLS-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.103 g
Final Vol: 1 mL

Lab ID #: 2304065-27RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.05%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: SLS-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.103 g
Final Vol: 1 mL

Lab ID #: 2304065-27RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 80.05%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.55	10	U	1.55
959-98-8	Endosulfan I	1.55	10	U	1.55
33213-65-9	Endosulfan II	1.55	10	U	1.55
1031-07-8	Endosulfan Sulfate	1.55	10	UJ	1.55
72-20-8	Endrin	1.55	10	U	1.55
7421-93-4	Endrin Aldehyde	3.11	10	UJ	3.11
53494-70-5	Endrin Ketone	1.55	10	U	1.55
1024-57-3	Heptachlor Epoxide	1.55	10	U	1.55
72-43-5	Methoxychlor	3.13	10	UJ	3.11

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*9.29*	*6.21*	*150*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.024 g
Final Vol: 1 mL

Lab ID #: 2304065-28
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 77.09%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**8.81**	1		**0.16**
72-55-9	**4,4'-DDE**	**3900**	1		**162**
50-29-3	**4,4'-DDT**	**847**	1		**16.2**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.65	1	U	0.65
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.19	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.24	1	U	3.24
11104-28-2	PCB-aroclor-1221	3.24	1	U	3.24
11141-16-5	PCB-aroclor-1232	3.24	1	U	3.24
53469-21-9	PCB-aroclor-1242	3.24	1	U	3.24
12672-29-6	PCB-aroclor-1248	1.62	1	U	1.62
11097-69-1	PCB-aroclor-1254	1.62	1	U	1.62
11096-82-5	PCB-aroclor-1260	1.62	1	U	1.62
37324-23-5	PCB-aroclor-1262	1.62	1	U	1.62
11100-14-4	PCB-aroclor-1268	1.62	1	U	1.62
8001-35-2	Toxaphene	32.4	1	U	1.62
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.85	6.48	106	30-130
877-09-8	Tetrachloro-m-xylene	5.67	6.48	88	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.024 g
Final Vol: 1 mL

Lab ID #: 2304065-28RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 77.09%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.024 g
Final Vol: 1 mL

Lab ID #: 2304065-28RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 77.09%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.62	10	U	1.62
959-98-8	Endosulfan I	1.62	10	U	1.62
33213-65-9	Endosulfan II	1.62	10	U	1.62
1031-07-8	Endosulfan Sulfate	1.62	10	UJ	1.62
72-20-8	Endrin	1.62	10	U	1.62
7421-93-4	Endrin Aldehyde	3.24	10	UJ	3.24
53494-70-5	Endrin Ketone	1.62	10	U	1.62
1024-57-3	Heptachlor Epoxide	1.62	10	U	1.62
72-43-5	Methoxychlor	3.24	10	UJ	3.24

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*11.7*	*6.48*	*181*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: AT-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.308 g
Final Vol: 1 mL

Lab ID #: 2304065-29
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 75.03%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**5.14**	1		**0.16**
72-55-9	**4,4'-DDE**	**2470**	1		**164**
50-29-3	**4,4'-DDT**	**382**	1		**16.4**
309-00-2	Aldrin	0.16	1	U	0.16
319-84-6	Alpha-BHC	0.16	1	U	0.16
12789-03-6	Chlordane, technical	0.66	1	U	0.66
5103-71-9	cis-Chlordane	0.16	1	U	0.16
5103-73-1	Cis-Nonachlor	0.16	1	U	0.16
58-89-9	Gamma-BHC	0.33	1	U	0.16
76-44-8	Heptachlor	0.16	1	U	0.16
27304-13-8	Oxychlordane	0.16	1	U	0.16
12674-11-2	PCB-aroclor-1016	3.28	1	U	3.28
11104-28-2	PCB-aroclor-1221	3.28	1	U	3.28
11141-16-5	PCB-aroclor-1232	3.28	1	U	3.28
53469-21-9	PCB-aroclor-1242	3.28	1	U	3.28
12672-29-6	PCB-aroclor-1248	1.64	1	U	1.64
11097-69-1	PCB-aroclor-1254	1.64	1	U	1.64
11096-82-5	PCB-aroclor-1260	1.64	1	U	1.64
37324-23-5	PCB-aroclor-1262	1.64	1	U	1.64
11100-14-4	PCB-aroclor-1268	1.64	1	U	1.64
8001-35-2	Toxaphene	32.8	1	U	1.64
5103-74-2	trans-Chlordane	0.16	1	U	0.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	6.41	6.56	98	30-130
877-09-8	Tetrachloro-m-xylene	5.75	6.56	88	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: AT-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.308 g
Final Vol: 1 mL

Lab ID #: 2304065-29RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 75.03%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.16	1	U	0.16
319-86-8	Delta-BHC	0.16	1	U	0.16

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: AT-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.308 g
Final Vol: 1 mL

Lab ID #: 2304065-29RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 75.03%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/28/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	Dieldrin	1.64	10	U	1.64
959-98-8	Endosulfan I	1.64	10	U	1.64
33213-65-9	Endosulfan II	1.64	10	U	1.64
1031-07-8	Endosulfan Sulfate	1.64	10	UJ	1.64
72-20-8	Endrin	1.64	10	U	1.64
7421-93-4	Endrin Aldehyde	3.28	10	UJ	3.28
53494-70-5	Endrin Ketone	1.64	10	U	1.64
1024-57-3	Heptachlor Epoxide	1.64	10	U	1.64
72-43-5	Methoxychlor	3.28	10	UJ	3.28

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	*Dibutylchlorendate*	*10.4*	*6.56*	*158*	*20-130*

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — Field ID: W-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.489 g
Final Vol: 1 mL

Lab ID #: 2304065-30
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 91.86%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**4.78**	1	**J**	**0.13**
72-55-9	**4,4'-DDE**	**2740**	1		**133**
50-29-3	**4,4'-DDT**	**481**	1		**13.3**
309-00-2	Aldrin	0.13	1	U	0.13
319-84-6	Alpha-BHC	0.13	1	U	0.13
12789-03-6	Chlordane, technical	0.53	1	U	0.53
5103-71-9	cis-Chlordane	0.13	1	U	0.13
5103-73-1	Cis-Nonachlor	0.13	1	U	0.13
58-89-9	Gamma-BHC	0.13	1	U	0.13
76-44-8	Heptachlor	0.13	1	U	0.13
27304-13-8	Oxychlordane	0.13	1	U	0.13
12674-11-2	PCB-aroclor-1016	2.66	1	U	2.66
11104-28-2	PCB-aroclor-1221	2.66	1	U	2.66
11141-16-5	PCB-aroclor-1232	2.66	1	U	2.66
53469-21-9	PCB-aroclor-1242	2.66	1	U	2.66
12672-29-6	PCB-aroclor-1248	1.33	1	U	1.33
11097-69-1	PCB-aroclor-1254	1.33	1	U	1.33
11096-82-5	PCB-aroclor-1260	1.33	1	U	1.33
37324-23-5	PCB-aroclor-1262	1.33	1	U	1.33
11100-14-4	PCB-aroclor-1268	1.33	1	U	1.33
8001-35-2	Toxaphene	53.1	1	U	1.33
5103-74-2	trans-Chlordane	0.13	1	U	0.13

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.36	5.31	101	30-130
877-09-8	Tetrachloro-m-xylene	4.66	5.31	88	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: W-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.489 g
Final Vol: 1 mL

Lab ID #: 2304065-30RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 91.86%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.13	1	U	0.13
319-86-8	Delta-BHC	0.13	1	U	0.13

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: W-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.489 g
Final Vol: 1 mL

Lab ID #: 2304065-30RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 91.86%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**16.9**	10		**1.33**
959-98-8	Endosulfan I	1.33	10	U	1.33
33213-65-9	Endosulfan II	1.33	10	U	1.33
1031-07-8	Endosulfan Sulfate	1.33	10	UJ	1.33
72-20-8	**Endrin**	**1.38**	10		**1.33**
7421-93-4	Endrin Aldehyde	2.66	10	UJ	2.66
53494-70-5	Endrin Ketone	1.33	10	U	1.33
1024-57-3	Heptachlor Epoxide	1.33	10	U	1.33
72-43-5	Methoxychlor	2.66	10	U	2.66

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	3.96	5.31	74	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: W-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.126 g
Final Vol: 1 mL

Lab ID #: 2304065-31
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.80%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**3.70**	1	**J**	**0.14**
72-55-9	**4,4'-DDE**	**1630**	1		**141**
50-29-3	**4,4'-DDT**	**295**	1		**14.1**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.57	1	U	0.57
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.66	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.83	1	U	2.83
11104-28-2	PCB-aroclor-1221	2.83	1	U	2.83
11141-16-5	PCB-aroclor-1232	2.83	1	U	2.83
53469-21-9	PCB-aroclor-1242	2.83	1	U	2.83
12672-29-6	PCB-aroclor-1248	1.41	1	U	1.41
11097-69-1	PCB-aroclor-1254	1.41	1	U	1.41
11096-82-5	PCB-aroclor-1260	1.41	1	U	1.41
37324-23-5	PCB-aroclor-1262	1.41	1	U	1.41
11100-14-4	PCB-aroclor-1268	1.41	1	U	1.41
8001-35-2	Toxaphene	56.6	1	U	1.41
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	5.48	5.66	97	30-130
877-09-8	Tetrachloro-m-xylene	4.88	5.66	86	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling — Field ID: W-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.126 g
Final Vol: 1 mL

Lab ID #: 2304065-31RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.80%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling — Field ID: W-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.126 g
Final Vol: 1 mL

Lab ID #: 2304065-31RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.80%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**17.3**	10		**1.41**
959-98-8	Endosulfan I	1.41	10	U	1.41
33213-65-9	Endosulfan II	1.41	10	U	1.41
1031-07-8	Endosulfan Sulfate	1.41	10	UJ	1.41
72-20-8	**Endrin**	**12.0**	10		**1.41**
7421-93-4	Endrin Aldehyde	2.83	10	UJ	2.83
53494-70-5	**Endrin Ketone**	**2.48**	10	**J**	**1.41**
1024-57-3	Heptachlor Epoxide	1.41	10	U	1.41
72-43-5	Methoxychlor	2.83	10	U	2.83

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.00	5.66	88	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **Field ID: W-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.272 g
Final Vol: 1 mL

Lab ID #: 2304065-32
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.91%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/24/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
72-54-8	**4,4'-DDD**	**3.11**	1		**0.14**
72-55-9	**4,4'-DDE**	**1550**	1		**140**
50-29-3	**4,4'-DDT**	**250**	1		**14.0**
309-00-2	Aldrin	0.14	1	U	0.14
319-84-6	Alpha-BHC	0.14	1	U	0.14
12789-03-6	Chlordane, technical	0.56	1	U	0.56
5103-71-9	cis-Chlordane	0.14	1	U	0.14
5103-73-1	Cis-Nonachlor	0.14	1	U	0.14
58-89-9	Gamma-BHC	0.30	1	U	0.14
76-44-8	Heptachlor	0.14	1	U	0.14
27304-13-8	Oxychlordane	0.14	1	U	0.14
12674-11-2	PCB-aroclor-1016	2.81	1	U	2.81
11104-28-2	PCB-aroclor-1221	2.81	1	U	2.81
11141-16-5	PCB-aroclor-1232	2.81	1	U	2.81
53469-21-9	PCB-aroclor-1242	2.81	1	U	2.81
12672-29-6	PCB-aroclor-1248	1.40	1	U	1.40
11097-69-1	PCB-aroclor-1254	1.40	1	U	1.40
11096-82-5	PCB-aroclor-1260	1.40	1	U	1.40
37324-23-5	PCB-aroclor-1262	1.40	1	U	1.40
11100-14-4	PCB-aroclor-1268	1.40	1	U	1.40
8001-35-2	Toxaphene	56.1	1	U	1.40
5103-74-2	trans-Chlordane	0.14	1	U	0.14

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.91	5.61	88	30-130
877-09-8	Tetrachloro-m-xylene	4.44	5.61	79	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling

Field ID: W-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.272 g
Final Vol: 1 mL

Lab ID #: 2304065-32RE1
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.91%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/23/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
319-85-7	Beta-BHC	0.14	1	U	0.14
319-86-8	Delta-BHC	0.14	1	U	0.14

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Project: LCB Sampling **Field ID: W-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.272 g
Final Vol: 1 mL

Lab ID #: 2304065-32RE8
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8081B8082A
% Solids: 87.91%

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
60-57-1	**Dieldrin**	**15.0**	10		**1.40**
959-98-8	Endosulfan I	1.40	10	U	1.40
33213-65-9	Endosulfan II	1.40	10	U	1.40
1031-07-8	Endosulfan Sulfate	1.40	10	UJ	1.40
72-20-8	**Endrin**	**8.66**	10		**1.40**
7421-93-4	Endrin Aldehyde	2.81	10	UJ	2.81
53494-70-5	**Endrin Ketone**	**1.92**	10	**J**	**1.40**
1024-57-3	Heptachlor Epoxide	1.40	10	U	1.40
72-43-5	Methoxychlor	2.81	10	U	2.81

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.46	5.61	79	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling | **QC Type : Method Blank**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BLK1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BLK1

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
72-54-8	4,4'-DDD	0.12	U	0.12
72-55-9	4,4'-DDE	0.12	U	0.12
50-29-3	4,4'-DDT	0.12	U	0.12
309-00-2	Aldrin	0.12	U	0.12
319-84-6	Alpha-BHC	0.12	U	0.12
12789-03-6	Chlordane, technical	0.50	U	0.50
5103-71-9	cis-Chlordane	0.12	U	0.12
5103-73-1	Cis-Nonachlor	0.12	U	0.12
58-89-9	Gamma-BHC	0.12	U	0.12
76-44-8	Heptachlor	0.12	U	0.12
27304-13-8	Oxychlordane	0.12	U	0.12
12674-11-2	PCB-aroclor-1016	2.50	U	2.50
11104-28-2	PCB-aroclor-1221	2.50	U	2.50
11141-16-5	PCB-aroclor-1232	2.50	U	2.50
53469-21-9	PCB-aroclor-1242	2.50	U	2.50
12672-29-6	PCB-aroclor-1248	1.25	U	1.25
11097-69-1	PCB-aroclor-1254	1.25	U	1.25
11096-82-5	PCB-aroclor-1260	1.25	U	1.25
37324-23-5	PCB-aroclor-1262	1.25	U	1.25
11100-14-4	PCB-aroclor-1268	1.25	U	1.25
8001-35-2	Toxaphene	1.25	U	1.25
5103-74-2	trans-Chlordane	0.12	U	0.12

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.25	5.00	85	30-130
877-09-8	Tetrachloro-m-xylene	3.89	5.00	78	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : Method Blank**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BLK2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BLK2

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/29/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
319-85-7	Beta-BHC	0.12	U	0.12
319-86-8	Delta-BHC	0.12	U	0.12

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Project: LCB Sampling

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BLK3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BLK3

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
60-57-1	Dieldrin	0.12	U	0.12
959-98-8	Endosulfan I	0.12	U	0.12
33213-65-9	Endosulfan II	0.12	U	0.12
1031-07-8	Endosulfan Sulfate	0.12	UJ	0.12
72-20-8	Endrin	0.12	U	0.12
7421-93-4	Endrin Aldehyde	0.25	UJ	0.25
53494-70-5	Endrin Ketone	0.12	U	0.12
1024-57-3	Heptachlor Epoxide	0.12	U	0.12
72-43-5	Methoxychlor	0.25	U	0.25

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.71	5.00	94	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BS1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BS1

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
4,4'-DDD	4.59	5.00	0.12	92	50-150
4,4'-DDE	5.00	5.00	0.12	100	50-150
4,4'-DDT	5.26	5.00	0.12	105	50-150
Aldrin	3.10	5.00	0.12	62	50-150
Alpha-BHC	3.85	5.00	0.12	77	50-150
cis-Chlordane	4.27	5.00	0.12	85	50-150
Cis-Nonachlor	3.24	5.00	0.12	65	50-150
Gamma-BHC	4.39	5.00	0.12	88	50-150
Heptachlor	4.53	5.00	0.12	91	50-150
Oxychlordane	4.20	5.00	0.12	84	50-150
PCB-aroclor-1016	21.5	25.0	2.50	86	50-150
PCB-aroclor-1260	23.8	25.0	1.25	95	50-150
Toxaphene	25.3	25.0	1.25	101	50-150
trans-Chlordane	4.50	5.00	0.12	90	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.49	5.00	90	50-150
877-09-8	Tetrachloro-m-xylene	4.12	5.00	82	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BS2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BS2

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Beta-BHC	4.26	5.00	0.12	85	50-150
Delta-BHC	3.43	5.00	0.12	69	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BS3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BS3

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Dieldrin	4.66	5.00	0.12	93	50-150
Endosulfan I	3.97	5.00	0.12	79	50-150
Endosulfan II	4.45	5.00	0.12	89	50-150
Endosulfan Sulfate	2.37	5.00	0.12	47	50-150
Endrin	4.28	5.00	0.12	86	50-150
Endrin Aldehyde	1.06	5.00	0.25	21	50-150
Endrin Ketone	4.60	5.00	0.12	92	50-150
Heptachlor Epoxide	2.97	5.00	0.12	59	50-150
Methoxychlor	5.56	5.00	0.25	111	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	5.09	5.00	102	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

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Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BSD1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BSD1

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
4,4'-DDD	4.33	5.00	87	6	50-150	40
4,4'-DDE	4.69	5.00	94	6	50-150	40
4,4'-DDT	4.96	5.00	99	6	50-150	40
Aldrin	2.85	5.00	57	8	50-150	40
Alpha-BHC	3.43	5.00	69	12	50-150	40
cis-Chlordane	3.95	5.00	79	8	50-150	40
Cis-Nonachlor	3.17	5.00	63	2	50-150	40
Gamma-BHC	4.02	5.00	80	9	50-150	40
Heptachlor	4.15	5.00	83	9	50-150	40
Oxychlordane	4.03	5.00	81	4	50-150	40
PCB-aroclor-1016	19.7	25.0	79	9	50-150	40
PCB-aroclor-1260	22.5	25.0	90	5	50-150	40
Toxaphene	22.3	25.0	89	13	50-150	40
trans-Chlordane	4.26	5.00	85	6	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	4.36	5.00	87	50-150
877-09-8	Tetrachloro-m-xylene	3.73	5.00	75	50-150

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling

QC Type : LCS Dup

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BSD2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BSD2

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Beta-BHC	3.99	5.00	80	6	50-150	40
Delta-BHC	3.20	5.00	64	7	50-150	40

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling   QC Type : LCS Dup

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D115-BSD3
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-BSD3

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/25/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Dieldrin	4.69	5.00	94	0.8	50-150	40
Endosulfan I	3.91	5.00	78	2	50-150	40
Endosulfan II	4.53	5.00	91	2	50-150	40
Endosulfan Sulfate	2.42	5.00	48	2	50-150	40
Endrin	4.26	5.00	85	0.4	50-150	40
Endrin Aldehyde	0.97	5.00	19	8	50-150	40
Endrin Ketone	4.58	5.00	92	0.4	50-150	40
Heptachlor Epoxide	2.89	5.00	58	3	50-150	40
Methoxychlor	5.69	5.00	114	2	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	4.66	5.00	93	50-150

Authorized by: Myrna Mandjikov   **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling — QC Type : Reference

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 2.009 g
Final Vol: 1 mL

Lab ID #: B23D115-SRM1
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-SRM1

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
4,4'-DDD	**84.6**	**108**	**1.24**	**78**	63-137
4,4'-DDE	**78.9**	**86.0**	**1.24**	**92**	73-127
4,4'-DDT	**176**	**119**	**1.24**	**148**	24-176
Alpha-BHC	**1.29**	**2.00**	**1.24**	**65**	65-135
cis-Chlordane	**16.4**	**16.5**	**1.24**	**99**	45-155
Cis-Nonachlor	**24.7**	**3.70**	**1.24**	**668**	65-135
trans-Chlordane	**16.7**	**8.00**	**1.24**	**209**	-57-257

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	41.1	49.8	83	30-130
877-09-8	Tetrachloro-m-xylene	43.6	49.8	88	30-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Chlorinated Pesticides & Polychlorinated Biphenyls

Project: LCB Sampling

QC Type : Reference

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 2.009 g
Final Vol: 1 mL

Lab ID #: B23D115-SRM2
Prep Method: SW3541
Analysis Method: SW8081B8082A
Source Field ID: B23D115-SRM2

Batch ID: B23D115
Prepared: 4/18/2023
Analyzed: 4/22/2023
Matrix: Sediment/Soil
Units: %

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
1770-80-5	Dibutylchlorendate	36.1	49.8	72	20-130

Authorized by: Myrna Mandjikov **Release Date:** 5/16/2023

Appendix A
Sample Correlation Table

Batch ID: B23D077 **Prep Method:** SW3541

Prepared: 4/13/2023 **Analysis Method:** SW8081B8082A

Field ID	MEL ID
KJ-SA1	2304065-01
KJ-SA1	2304065-01RE1
KJ-SA1	2304065-01RE2
KJ-SA2	2304065-02
KJ-SA2	2304065-02RE1
KJ-SA2	2304065-02RE2
HE-SA1	2304065-04
HE-SA1	2304065-04RE1
HE-SA1	2304065-04RE2
HE-SA2	2304065-05
HE-SA2	2304065-05RE1
HE-SA2	2304065-05RE2
B-SA1	2304065-07
B-SA1	2304065-07RE1
B-SA1	2304065-07RE8
B-SA2	2304065-08
B-SA2	2304065-08RE1
B-SA2	2304065-08RE8
OG-SA1	2304065-09
OG-SA1	2304065-09RE1
OG-SA1	2304065-09RE8
OG-SA2	2304065-10
OG-SA2	2304065-10RE1
OG-SA2	2304065-10RE8
T-SA1	2304065-11
T-SA1	2304065-11RE1
T-SA1	2304065-11RE8
T-SA2	2304065-12
T-SA2	2304065-12RE1
T-SA2	2304065-12RE8
TP-SA1	2304065-13
TP-SA1	2304065-13RE1
TP-SA1	2304065-13RE8
TP-SA2	2304065-14
TP-SA2	2304065-14RE1
TP-SA2	2304065-14RE8
BM-SA1	2304065-15
BM-SA1	2304065-15RE1
BM-SA1	2304065-15RE8
BM-SA2	2304065-16

Appendix A
Sample Correlation Table

Batch ID: B23D077 | **Prep Method:** SW3541

Prepared: 4/13/2023 | **Analysis Method:** SW8081B8082A

Field ID	MEL ID
BM-SA2	2304065-16RE1
BM-SA2	2304065-16RE8
BM-SA2(D)	2304065-17
BM-SA2(D)	2304065-17RE1
BM-SA2(D)	2304065-17RE8
GG-SA1	2304065-18
GG-SA1	2304065-18RE1
GG-SA1	2304065-18RE8
GG-SA2	2304065-19
GG-SA2	2304065-19RE1
GG-SA2	2304065-19RE8
GRP-SA1	2304065-20
GRP-SA1	2304065-20RE1
GRP-SA1	2304065-20RE8
GRP-SA2	2304065-21
GRP-SA2	2304065-21RE1
GRP-SA2	2304065-21RE8
EP-SA1	2304065-22
EP-SA1	2304065-22RE1
EP-SA1	2304065-22RE8
Method Blank	B23D077-BLK1
Method Blank	B23D077-BLK2
Method Blank	B23D077-BLK3
LCS	B23D077-BS1
LCS	B23D077-BS2
LCS	B23D077-BS3
LCS Dup	B23D077-BSD1
LCS Dup	B23D077-BSD2
LCS Dup	B23D077-BSD3
SRM1944 0%	B23D077-SRM1
SRM1944 50%	B23D077-SRM2

Appendix A
Sample Correlation Table

Batch ID: B23D115 **Prep Method:** SW3541

Prepared: 4/18/2023 **Analysis Method:** SW8081B8082A

Field ID	MEL ID
EP-SA2	2304065-23
EP-SA2	2304065-23RE1
EP-SA2	2304065-23RE8
PSV-SA1	2304065-24
PSV-SA1	2304065-24RE1
PSV-SA1	2304065-24RE8
PSV-SA2	2304065-25
PSV-SA2	2304065-25RE1
PSV-SA2	2304065-25RE2
SLS-SA1	2304065-26
SLS-SA1	2304065-26RE1
SLS-SA1	2304065-26RE8
SLS-SA2	2304065-27
SLS-SA2	2304065-27RE1
SLS-SA2	2304065-27RE8
AT-SA1	2304065-28
AT-SA1	2304065-28RE1
AT-SA1	2304065-28RE8
AT-SA2	2304065-29
AT-SA2	2304065-29RE1
AT-SA2	2304065-29RE8
W-SA1	2304065-30
W-SA1	2304065-30RE1
W-SA1	2304065-30RE8
W-SA2	2304065-31
W-SA2	2304065-31RE1
W-SA2	2304065-31RE8
W-SA2(D)	2304065-32
W-SA2(D)	2304065-32RE1
W-SA2(D)	2304065-32RE8
Method Blank	B23D115-BLK1
Method Blank	B23D115-BLK2
Method Blank	B23D115-BLK3
LCS	B23D115-BS1
LCS	B23D115-BS2
LCS	B23D115-BS3
LCS Dup	B23D115-BSD1
LCS Dup	B23D115-BSD2
LCS Dup	B23D115-BSD3
1944	B23D115-SRM1

Appendix A
Sample Correlation Table

Batch ID: B23D115 **Prep Method:** SW3541

Prepared: 4/18/2023 **Analysis Method:** SW8081B8082A

Field ID	MEL ID
1944 50%	B23D115-SRM2

Appendix B
Manual Qualification Table

WO: 2304065 **Analysis:** PEST2PCB

Reported result is estimated; Surrogate recovery exceeded QC limits.

Dieldrin J: 2304065-13RE8, 2304065-24RE8, 2304065-25RE2,
Endosulfan II J: 2304065-25RE2,
Endrin J: 2304065-13RE8, 2304065-24RE8, 2304065-25RE2,
Endrin Ketone J: 2304065-13RE8, 2304065-18RE8, 2304065-24RE8, 2304065-25RE2,

Reported result is estimated; RPD between columns exceeded QC limits.

4,4'-DDD J: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-30, 2304065-31,
4,4'-DDT J: 2304065-18, 2304065-19, 2304065-24,
Dieldrin J: 2304065-04RE2,
Endosulfan II J: 2304065-02RE2,
Endosulfan Sulfate J: 2304065-04RE2,
Endrin Ketone J: 2304065-02RE2, 2304065-05RE2, 2304065-23RE8, 2304065-31RE8, 2304065-32RE8,

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

Endosulfan Sulfate UJ: 2304065-23RE8, 2304065-24RE8, 2304065-26RE8, 2304065-27RE8, 2304065-28RE8, 2304065-29RE8, 2304065-30RE8, 2304065-31RE8, 2304065-32RE8, B23D077-BLK3, B23D115-BLK3,
Endrin Aldehyde UJ: 2304065-01RE2, 2304065-02RE2, 2304065-04RE2, 2304065-05RE2, 2304065-07RE8, 2304065-08RE8, 2304065-09RE8, 2304065-10RE8, 2304065-11RE8, 2304065-12RE8, 2304065-13RE8, 2304065-14RE8, 2304065-15RE8, 2304065-16RE8, 2304065-17RE8, 2304065-18RE8, 2304065-19RE8, 2304065-20RE8, 2304065-21RE8, 2304065-22RE8, 2304065-23RE8, 2304065-24RE8, 2304065-25RE2, 2304065-26RE8, 2304065-27RE8, 2304065-28RE8, 2304065-29RE8, 2304065-30RE8, 2304065-31RE8, 2304065-32RE8, B23D077-BLK3, B23D115-BLK3,

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

Methoxychlor UJ: 2304065-17RE8, 2304065-18RE8, 2304065-19RE8, 2304065-22RE8, 2304065-23RE8, 2304065-24RE8, 2304065-26RE8, 2304065-27RE8, 2304065-28RE8, 2304065-29RE8,

Analyte was not detected at or above the MRL; coeluting interfering peaks prevented quantitation at the MRL.

Endosulfan Sulfate U: 2304065-25RE2,
Methoxychlor U: 2304065-25RE2,
Toxaphene U: 2304065-04, 2304065-05, 2304065-08, 2304065-09, 2304065-10, 2304065-11, 2304065-12, 2304065-13, 2304065-14, 2304065-15, 2304065-16, 2304065-17, 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-29, 2304065-30, 2304065-31, 2304065-32,

MRL raised due to background; analyte was not detected at or above the reported result.

Gamma-BHC U: 2304065-01, 2304065-02, 2304065-04, 2304065-05, 2304065-07, 2304065-08, 2304065-09, 2304065-10, 2304065-11, 2304065-12, 2304065-13, 2304065-14, 2304065-15, 2304065-16, 2304065-17, 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-29, 2304065-30, 2304065-31, 2304065-32,

Appendix C
Data Qualifier Definitions

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

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception
2304065-13RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-14RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-17RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-18RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-19RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-22RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-24RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-25RE2	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-26RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-27RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-28RE8	surr: Dibutylchlorendate	Exceeds upper control limit
2304065-29RE8	surr: Dibutylchlorendate	Exceeds upper control limit
B23D077-BLK1	Gamma-BHC	Blank > 1/2 MRL
B23D077-BS3	Endrin Aldehyde	Exceeds lower control limit
B23D077-BSD3	Endrin Aldehyde	Exceeds lower control limit
B23D077-SRM1	4,4'-DDE	Exceeds upper control limit
B23D077-SRM1	4,4'-DDT	Exceeds upper control limit
B23D115-BS3	Endosulfan Sulfate	Exceeds lower control limit
B23D115-BS3	Endrin Aldehyde	Exceeds lower control limit
B23D115-BSD3	Endosulfan Sulfate	Exceeds lower control limit
B23D115-BSD3	Endrin Aldehyde	Exceeds lower control limit
B23D115-SRM1	Alpha-BHC	Exceeds lower control limit
B23D115-SRM1	Cis-Nonachlor	Exceeds upper control limit
S231603-CCVE	4,4'-DDE	Exceeds upper control limit
S231603-CCVE	4,4'-DDT	Exceeds upper control limit
S231703-CCV3	surr: Decachlorobiphenyl (DCB)	Exceeds lower control limit
S231703-CCV3	surr: Tetrachloro-m-xylene	Exceeds lower control limit
S231710-CCV5	Methoxychlor	Exceeds lower control limit

QC Exceptions determined using unrounded QC results but are reported as integers throughout this analytical report.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D1201 **Analysis:** PEST2PCB

LabNumber	Analyte	QC Exception

No ICAL exceptions.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D2202 **Analysis:** PEST2PCB

LabNumber	Analyte	QC Exception

No ICAL exceptions.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D2203 **Analysis:** PEST2PCB

LabNumber	Analyte	QC Exception

No ICAL exceptions.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D2801 **Analysis:** PEST2PCB

LabNumber	Analyte	QC Exception

No ICAL exceptions.

Appendix D

Volatile Organics Analysis (VOA) Analytical Results

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

Case Narrative

May 9, 2023

To: Caron, Rachel

Project: LCB Sampling

Work Order: 2304065

Subject: Volatile Organics Analysis

From: Dolores Montgomery

Sample Receipt

Enclosed are the VOA results for the samples received by MEL on April 12, 2023. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

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

- extracted following a modification of method SW5030B.
- analyzed following a modification of method SW8260D.

Analyst Comments

VOA by GCMS. Matrix interference in the soil samples caused recoveries of internal standards to be overall low resulting in qualification of data. Sample 2304065-39 had no recoveries of internal standard or surrogates and all data for this sample had to be rejected. Extreme low recoveries of internal standard 1,4-Dichlorobenzene-D4 in samples 2304065-34, 2304065-29 and 2304065-47 resulted in the analytes associated with that internal standard to be rejected. In other cases where intenal standards were outside recovery limits low the data was qualified as estimated.

Sample Qualification

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

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendix D. All analytes met linearity requirements unless noted in Appendix E.

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

Project: LCB Sampling **Field ID: GG-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.445 g
Final Vol: 5 mL

Lab ID #: 2304065-18
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.51%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.40	1	U	1.40
71-55-6	1,1,1-Trichloroethane	1.40	1	U	1.40
79-34-5	1,1,2,2-Tetrachloroethane	1.40	1	U	1.40
79-00-5	1,1,2-Trichloroethane	1.40	1	U	1.40
76-13-1	1,1,2-Trichlorotrifluoroethane	1.40	1	U	1.40
75-34-3	1,1-Dichloroethane	1.40	1	U	1.40
75-35-4	1,1-Dichloroethene	1.40	1	U	1.40
563-58-6	1,1-Dichloropropene	1.40	1	U	1.40
87-61-6	1,2,3-Trichlorobenzene	1.40	1	UJ	1.40
96-18-4	1,2,3-Trichloropropane	1.40	1	UJ	1.40
120-82-1	1,2,4-Trichlorobenzene	1.40	1	UJ	1.40
95-63-6	1,2,4-Trimethylbenzene	1.40	1	UJ	1.40
96-12-8	1,2-Dibromo-3-Chloropropane	1.40	1	UJ	1.40
106-93-4	1,2-Dibromoethane	1.40	1	U	1.40
95-50-1	1,2-Dichlorobenzene	1.40	1	UJ	1.40
107-06-2	1,2-Dichloroethane	1.40	1	U	1.40
78-87-5	1,2-Dichloropropane	1.40	1	U	1.40
108-67-8	1,3,5-Trimethylbenzene	1.40	1	UJ	1.40
541-73-1	1,3-Dichlorobenzene	1.40	1	UJ	1.40
142-28-9	1,3-Dichloropropane	1.40	1	U	1.40
106-46-7	1,4-Dichlorobenzene	1.40	1	UJ	1.40
594-20-7	2,2-Dichloropropane	1.40	1	U	1.40
78-93-3	2-Butanone	1.40	1	U	1.40
95-49-8	2-Chlorotoluene	1.40	1	UJ	1.40
591-78-6	2-Hexanone	1.40	1	U	1.40
106-43-4	4-Chlorotoluene	1.40	1	UJ	1.40
108-10-1	4-Methyl-2-pentanone	1.40	1	U	1.40
67-64-1	Acetone	1.91	1	U	1.40
71-43-2	Benzene	1.40	1	U	1.40
108-86-1	Bromobenzene	1.40	1	UJ	1.40
74-97-5	Bromochloromethane	1.40	1	U	1.40
75-27-4	Bromodichloromethane	1.40	1	U	1.40
75-25-2	Bromoform	1.40	1	UJ	1.40
74-83-9	Bromomethane	2.79	1	U	2.79
75-15-0	Carbon Disulfide	1.40	1	U	1.40
56-23-5	Carbon Tetrachloride	1.40	1	U	1.40
108-90-7	Chlorobenzene	1.40	1	U	1.40
75-00-3	Chloroethane	1.40	1	UJ	1.40
67-66-3	Chloroform	1.40	1	U	1.40
74-87-3	Chloromethane	1.40	1	U	1.40
156-59-2	Cis-1,2-Dichloroethene	1.40	1	U	1.40
10061-01-5	Cis-1,3-Dichloropropene	1.40	1	U	1.40
124-48-1	Dibromochloromethane	1.40	1	U	1.40
74-95-3	Dibromomethane	1.40	1	U	1.40
75-71-8	Dichlorodifluoromethane	2.79	1	U	2.79
60-29-7	Ethyl Ether	1.40	1	U	1.40

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

Project: LCB Sampling — Field ID: GG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.445 g
Final Vol: 5 mL

Lab ID #: 2304065-18
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.51%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.40	1	U	1.40
87-68-3	Hexachlorobutadiene	1.40	1	UJ	1.40
67-72-1	Hexachloroethane	1.40	1	UJ	1.40
98-82-8	Isopropylbenzene (Cumene)	1.40	1	UJ	1.40
179601-23-1	m,p-Xylene	2.79	1	U	2.79
74-88-4	Methyl Iodide	1.40	1	U	1.40
1634-04-4	Methyl t-butyl ether	1.40	1	U	1.40
75-09-2	Methylene Chloride	1.40	1	U	1.40
91-20-3	Naphthalene	1.40	1	UJ	1.40
104-51-8	n-Butylbenzene	1.40	1	UJ	1.40
103-65-1	n-Propylbenzene	1.40	1	UJ	1.40
95-47-6	o-Xylene	1.40	1	U	1.40
76-01-7	Pentachloroethane	1.40	1	UJ	1.40
99-87-6	p-Isopropyltoluene	1.40	1	UJ	1.40
135-98-8	Sec-Butylbenzene	1.40	1	UJ	1.40
100-42-5	Styrene	1.40	1	U	1.40
98-06-6	Tert-Butylbenzene	1.40	1	UJ	1.40
127-18-4	Tetrachloroethene	1.40	1	U	1.40
109-99-9	Tetrahydrofuran	1.40	1	U	1.40
108-88-3	Toluene	1.40	1	U	1.40
156-60-5	Trans-1,2-Dichloroethene	1.40	1	U	1.40
10061-02-6	Trans-1,3-Dichloropropene	1.40	1	U	1.40
110-57-6	Trans-1,4-Dichloro-2-butene	2.79	1	U	2.79
79-01-6	Trichloroethene	1.40	1	U	1.40
75-69-4	Trichlorofluoromethane	1.40	1	U	1.40
75-01-4	Vinyl Chloride	1.40	1	U	1.40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.9	10.0	109	80-120
17060-07-0	1,2-Dichloroethane-D4	11.9	10.0	119	80-120
540-36-3	1,4-Difluorobenzene	9.89	10.0	99	80-120
460-00-4	*p-Bromofluorobenzene*	*6.87*	*10.0*	*69*	*80-120*
2037-26-5	Toluene-D8	11.6	10.0	116	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: GG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 3.938 g
Final Vol: 5 mL

Lab ID #: 2304065-19
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.81%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.57	1	U	1.57
71-55-6	1,1,1-Trichloroethane	1.57	1	U	1.57
79-34-5	1,1,2,2-Tetrachloroethane	1.57	1	U	1.57
79-00-5	1,1,2-Trichloroethane	1.57	1	U	1.57
76-13-1	1,1,2-Trichlorotrifluoroethane	1.57	1	U	1.57
75-34-3	1,1-Dichloroethane	1.57	1	U	1.57
75-35-4	1,1-Dichloroethene	1.57	1	U	1.57
563-58-6	1,1-Dichloropropene	1.57	1	U	1.57
87-61-6	1,2,3-Trichlorobenzene	1.57	1	UJ	1.57
96-18-4	1,2,3-Trichloropropane	1.57	1	UJ	1.57
120-82-1	1,2,4-Trichlorobenzene	1.57	1	UJ	1.57
95-63-6	1,2,4-Trimethylbenzene	1.57	1	UJ	1.57
96-12-8	1,2-Dibromo-3-Chloropropane	1.57	1	UJ	1.57
106-93-4	1,2-Dibromoethane	1.57	1	U	1.57
95-50-1	1,2-Dichlorobenzene	1.57	1	UJ	1.57
107-06-2	1,2-Dichloroethane	1.57	1	U	1.57
78-87-5	1,2-Dichloropropane	1.57	1	U	1.57
108-67-8	1,3,5-Trimethylbenzene	1.57	1	UJ	1.57
541-73-1	1,3-Dichlorobenzene	1.57	1	UJ	1.57
142-28-9	1,3-Dichloropropane	1.57	1	U	1.57
106-46-7	1,4-Dichlorobenzene	1.57	1	UJ	1.57
594-20-7	2,2-Dichloropropane	1.57	1	U	1.57
78-93-3	2-Butanone	1.57	1	U	1.57
95-49-8	2-Chlorotoluene	1.57	1	UJ	1.57
591-78-6	2-Hexanone	1.57	1	U	1.57
106-43-4	4-Chlorotoluene	1.57	1	UJ	1.57
108-10-1	4-Methyl-2-pentanone	1.57	1	U	1.57
67-64-1	Acetone	1.57	1	U	1.57
71-43-2	Benzene	1.57	1	U	1.57
108-86-1	Bromobenzene	1.57	1	UJ	1.57
74-97-5	Bromochloromethane	1.57	1	U	1.57
75-27-4	Bromodichloromethane	1.57	1	U	1.57
75-25-2	Bromoform	1.57	1	UJ	1.57
74-83-9	Bromomethane	3.14	1	U	3.14
75-15-0	Carbon Disulfide	1.57	1	U	1.57
56-23-5	Carbon Tetrachloride	1.57	1	U	1.57
108-90-7	Chlorobenzene	1.57	1	U	1.57
75-00-3	Chloroethane	1.57	1	UJ	1.57
67-66-3	Chloroform	1.57	1	U	1.57
74-87-3	Chloromethane	1.57	1	U	1.57
156-59-2	Cis-1,2-Dichloroethene	1.57	1	U	1.57
10061-01-5	Cis-1,3-Dichloropropene	1.57	1	U	1.57
124-48-1	Dibromochloromethane	1.57	1	U	1.57
74-95-3	Dibromomethane	1.57	1	U	1.57
75-71-8	Dichlorodifluoromethane	3.14	1	U	3.14
60-29-7	Ethyl Ether	1.57	1	U	1.57

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

Project: LCB Sampling

Field ID: GG-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 3.938 g
Final Vol: 5 mL

Lab ID #: 2304065-19
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.81%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.57	1	U	1.57
87-68-3	Hexachlorobutadiene	1.57	1	UJ	1.57
67-72-1	Hexachloroethane	1.57	1	UJ	1.57
98-82-8	Isopropylbenzene (Cumene)	1.57	1	UJ	1.57
179601-23-1	m,p-Xylene	3.14	1	U	3.14
74-88-4	Methyl Iodide	1.57	1	U	1.57
1634-04-4	Methyl t-butyl ether	1.57	1	U	1.57
75-09-2	Methylene Chloride	1.57	1	U	1.57
91-20-3	Naphthalene	1.57	1	UJ	1.57
104-51-8	n-Butylbenzene	1.57	1	UJ	1.57
103-65-1	n-Propylbenzene	1.57	1	UJ	1.57
95-47-6	o-Xylene	1.57	1	U	1.57
76-01-7	Pentachloroethane	1.57	1	UJ	1.57
99-87-6	p-Isopropyltoluene	1.57	1	UJ	1.57
135-98-8	Sec-Butylbenzene	1.57	1	UJ	1.57
100-42-5	Styrene	1.57	1	U	1.57
98-06-6	Tert-Butylbenzene	1.57	1	UJ	1.57
127-18-4	Tetrachloroethene	1.57	1	U	1.57
109-99-9	Tetrahydrofuran	1.57	1	U	1.57
108-88-3	Toluene	1.57	1	U	1.57
156-60-5	Trans-1,2-Dichloroethene	1.57	1	U	1.57
10061-02-6	Trans-1,3-Dichloropropene	1.57	1	U	1.57
110-57-6	Trans-1,4-Dichloro-2-butene	3.14	1	U	3.14
79-01-6	Trichloroethene	1.57	1	U	1.57
75-69-4	Trichlorofluoromethane	1.57	1	U	1.57
75-01-4	Vinyl Chloride	1.57	1	U	1.57

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.7	10.0	107	80-120
17060-07-0	1,2-Dichloroethane-D4	11.3	10.0	113	80-120
540-36-3	1,4-Difluorobenzene	9.92	10.0	99	80-120
460-00-4	*p-Bromofluorobenzene*	*7.38*	*10.0*	*74*	*80-120*
2037-26-5	Toluene-D8	11.1	10.0	111	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: GRP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.972 g
Final Vol: 5 mL

Lab ID #: 2304065-20
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.33%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.15	1	U	1.15
71-55-6	1,1,1-Trichloroethane	1.15	1	U	1.15
79-34-5	1,1,2,2-Tetrachloroethane	1.15	1	U	1.15
79-00-5	1,1,2-Trichloroethane	1.15	1	U	1.15
76-13-1	1,1,2-Trichlorotrifluoroethane	1.15	1	U	1.15
75-34-3	1,1-Dichloroethane	1.15	1	U	1.15
75-35-4	1,1-Dichloroethene	1.15	1	U	1.15
563-58-6	1,1-Dichloropropene	1.15	1	U	1.15
87-61-6	1,2,3-Trichlorobenzene	1.15	1	UJ	1.15
96-18-4	1,2,3-Trichloropropane	1.15	1	UJ	1.15
120-82-1	1,2,4-Trichlorobenzene	1.15	1	UJ	1.15
95-63-6	1,2,4-Trimethylbenzene	1.15	1	UJ	1.15
96-12-8	1,2-Dibromo-3-Chloropropane	1.15	1	UJ	1.15
106-93-4	1,2-Dibromoethane	1.15	1	U	1.15
95-50-1	1,2-Dichlorobenzene	1.15	1	UJ	1.15
107-06-2	1,2-Dichloroethane	1.15	1	U	1.15
78-87-5	1,2-Dichloropropane	1.15	1	U	1.15
108-67-8	1,3,5-Trimethylbenzene	1.15	1	UJ	1.15
541-73-1	1,3-Dichlorobenzene	1.15	1	UJ	1.15
142-28-9	1,3-Dichloropropane	1.15	1	U	1.15
106-46-7	1,4-Dichlorobenzene	1.15	1	UJ	1.15
594-20-7	2,2-Dichloropropane	1.15	1	U	1.15
78-93-3	2-Butanone	1.15	1	U	1.15
95-49-8	2-Chlorotoluene	1.15	1	UJ	1.15
591-78-6	2-Hexanone	1.15	1	U	1.15
106-43-4	4-Chlorotoluene	1.15	1	UJ	1.15
108-10-1	4-Methyl-2-pentanone	1.15	1	U	1.15
67-64-1	Acetone	2.83	1	U	1.15
71-43-2	Benzene	1.15	1	U	1.15
108-86-1	Bromobenzene	1.15	1	UJ	1.15
74-97-5	Bromochloromethane	1.15	1	U	1.15
75-27-4	Bromodichloromethane	1.15	1	U	1.15
75-25-2	Bromoform	1.15	1	UJ	1.15
74-83-9	Bromomethane	2.30	1	U	2.30
75-15-0	Carbon Disulfide	1.15	1	U	1.15
56-23-5	Carbon Tetrachloride	1.15	1	U	1.15
108-90-7	Chlorobenzene	1.15	1	U	1.15
75-00-3	Chloroethane	1.15	1	UJ	1.15
67-66-3	Chloroform	1.15	1	U	1.15
74-87-3	Chloromethane	1.15	1	U	1.15
156-59-2	Cis-1,2-Dichloroethene	1.15	1	U	1.15
10061-01-5	Cis-1,3-Dichloropropene	1.15	1	U	1.15
124-48-1	Dibromochloromethane	1.15	1	U	1.15
74-95-3	Dibromomethane	1.15	1	U	1.15
75-71-8	Dichlorodifluoromethane	2.30	1	U	2.30
60-29-7	Ethyl Ether	1.15	1	U	1.15

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

Project: LCB Sampling

Field ID: GRP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.972 g
Final Vol: 5 mL

Lab ID #: 2304065-20
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.33%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.15	1	U	1.15
87-68-3	Hexachlorobutadiene	1.15	1	UJ	1.15
67-72-1	Hexachloroethane	1.15	1	UJ	1.15
98-82-8	Isopropylbenzene (Cumene)	1.15	1	UJ	1.15
179601-23-1	m,p-Xylene	2.30	1	U	2.30
74-88-4	Methyl Iodide	1.15	1	U	1.15
1634-04-4	Methyl t-butyl ether	1.15	1	U	1.15
75-09-2	Methylene Chloride	1.15	1	U	1.15
91-20-3	Naphthalene	1.15	1	UJ	1.15
104-51-8	n-Butylbenzene	1.15	1	UJ	1.15
103-65-1	n-Propylbenzene	1.15	1	UJ	1.15
95-47-6	o-Xylene	1.15	1	U	1.15
76-01-7	Pentachloroethane	1.15	1	UJ	1.15
99-87-6	p-Isopropyltoluene	1.15	1	UJ	1.15
135-98-8	Sec-Butylbenzene	1.15	1	UJ	1.15
100-42-5	Styrene	1.15	1	U	1.15
98-06-6	Tert-Butylbenzene	1.15	1	UJ	1.15
127-18-4	Tetrachloroethene	1.15	1	U	1.15
109-99-9	Tetrahydrofuran	1.15	1	U	1.15
108-88-3	Toluene	1.15	1	U	1.15
156-60-5	Trans-1,2-Dichloroethene	1.15	1	U	1.15
10061-02-6	Trans-1,3-Dichloropropene	1.15	1	U	1.15
110-57-6	Trans-1,4-Dichloro-2-butene	2.30	1	U	2.30
79-01-6	Trichloroethene	1.15	1	U	1.15
75-69-4	Trichlorofluoromethane	1.15	1	U	1.15
75-01-4	Vinyl Chloride	1.15	1	U	1.15

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.9	10.0	109	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.3*	*10.0*	*123*	*80-120*
540-36-3	1,4-Difluorobenzene	9.96	10.0	100	80-120
460-00-4	*p-Bromofluorobenzene*	*6.77*	*10.0*	*68*	*80-120*
2037-26-5	Toluene-D8	11.5	10.0	115	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: GRP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.909 g
Final Vol: 5 mL

Lab ID #: 2304065-21
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.08%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.18	1	UJ	1.18
71-55-6	1,1,1-Trichloroethane	1.18	1	UJ	1.18
79-34-5	1,1,2,2-Tetrachloroethane	1.18	1	UJ	1.18
79-00-5	1,1,2-Trichloroethane	1.18	1	UJ	1.18
76-13-1	1,1,2-Trichlorotrifluoroethane	1.18	1	UJ	1.18
75-34-3	1,1-Dichloroethane	1.18	1	UJ	1.18
75-35-4	1,1-Dichloroethene	1.18	1	UJ	1.18
563-58-6	1,1-Dichloropropene	1.18	1	UJ	1.18
87-61-6	1,2,3-Trichlorobenzene	1.18	1	UJ	1.18
96-18-4	1,2,3-Trichloropropane	1.18	1	UJ	1.18
120-82-1	1,2,4-Trichlorobenzene	1.18	1	UJ	1.18
95-63-6	1,2,4-Trimethylbenzene	1.18	1	UJ	1.18
96-12-8	1,2-Dibromo-3-Chloropropane	1.18	1	UJ	1.18
106-93-4	1,2-Dibromoethane	1.18	1	UJ	1.18
95-50-1	1,2-Dichlorobenzene	1.18	1	UJ	1.18
107-06-2	1,2-Dichloroethane	1.18	1	UJ	1.18
78-87-5	1,2-Dichloropropane	1.18	1	UJ	1.18
108-67-8	1,3,5-Trimethylbenzene	1.18	1	UJ	1.18
541-73-1	1,3-Dichlorobenzene	1.18	1	UJ	1.18
142-28-9	1,3-Dichloropropane	1.18	1	UJ	1.18
106-46-7	1,4-Dichlorobenzene	1.18	1	UJ	1.18
594-20-7	2,2-Dichloropropane	1.18	1	UJ	1.18
78-93-3	2-Butanone	1.18	1	UJ	1.18
95-49-8	2-Chlorotoluene	1.18	1	UJ	1.18
591-78-6	2-Hexanone	1.18	1	UJ	1.18
106-43-4	4-Chlorotoluene	1.18	1	UJ	1.18
108-10-1	4-Methyl-2-pentanone	1.18	1	UJ	1.18
67-64-1	Acetone	2.35	1	UJ	1.18
71-43-2	Benzene	1.18	1	UJ	1.18
108-86-1	Bromobenzene	1.18	1	UJ	1.18
74-97-5	Bromochloromethane	1.18	1	UJ	1.18
75-27-4	Bromodichloromethane	1.18	1	UJ	1.18
75-25-2	Bromoform	1.18	1	UJ	1.18
74-83-9	Bromomethane	2.37	1	UJ	2.37
75-15-0	Carbon Disulfide	1.18	1	UJ	1.18
56-23-5	Carbon Tetrachloride	1.18	1	UJ	1.18
108-90-7	Chlorobenzene	1.18	1	UJ	1.18
75-00-3	Chloroethane	1.18	1	UJ	1.18
67-66-3	Chloroform	1.18	1	UJ	1.18
74-87-3	Chloromethane	1.18	1	UJ	1.18
156-59-2	Cis-1,2-Dichloroethene	1.18	1	UJ	1.18
10061-01-5	Cis-1,3-Dichloropropene	1.18	1	UJ	1.18
124-48-1	Dibromochloromethane	1.18	1	UJ	1.18
74-95-3	Dibromomethane	1.18	1	UJ	1.18
75-71-8	Dichlorodifluoromethane	2.37	1	UJ	2.37
60-29-7	Ethyl Ether	1.18	1	UJ	1.18

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

Project: LCB Sampling **Field ID: GRP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.909 g
Final Vol: 5 mL

Lab ID #: 2304065-21
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.08%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.18	1	UJ	1.18
87-68-3	Hexachlorobutadiene	1.18	1	UJ	1.18
67-72-1	Hexachloroethane	1.18	1	UJ	1.18
98-82-8	Isopropylbenzene (Cumene)	1.18	1	UJ	1.18
179601-23-1	m,p-Xylene	2.37	1	UJ	2.37
74-88-4	Methyl Iodide	1.18	1	UJ	1.18
1634-04-4	Methyl t-butyl ether	1.18	1	UJ	1.18
75-09-2	Methylene Chloride	1.18	1	UJ	1.18
91-20-3	Naphthalene	1.18	1	UJ	1.18
104-51-8	n-Butylbenzene	1.18	1	UJ	1.18
103-65-1	n-Propylbenzene	1.18	1	UJ	1.18
95-47-6	o-Xylene	1.18	1	UJ	1.18
76-01-7	Pentachloroethane	1.18	1	UJ	1.18
99-87-6	p-Isopropyltoluene	1.18	1	UJ	1.18
135-98-8	Sec-Butylbenzene	1.18	1	UJ	1.18
100-42-5	Styrene	1.18	1	UJ	1.18
98-06-6	Tert-Butylbenzene	1.18	1	UJ	1.18
127-18-4	Tetrachloroethene	1.18	1	UJ	1.18
109-99-9	Tetrahydrofuran	1.18	1	UJ	1.18
108-88-3	Toluene	1.18	1	UJ	1.18
156-60-5	Trans-1,2-Dichloroethene	1.18	1	UJ	1.18
10061-02-6	Trans-1,3-Dichloropropene	1.18	1	UJ	1.18
110-57-6	Trans-1,4-Dichloro-2-butene	2.37	1	UJ	2.37
79-01-6	Trichloroethene	1.18	1	UJ	1.18
75-69-4	Trichlorofluoromethane	1.18	1	UJ	1.18
75-01-4	Vinyl Chloride	1.18	1	UJ	1.18

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.3	10.0	113	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*13.6*	*10.0*	*136*	*80-120*
540-36-3	1,4-Difluorobenzene	9.93	10.0	99	80-120
460-00-4	*p-Bromofluorobenzene*	*5.89*	*10.0*	*59*	*80-120*
2037-26-5	Toluene-D8	12.0	10.0	120	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling Field ID: EP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.103 g
Final Vol: 5 mL

Lab ID #: 2304065-22
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 82.88%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.18	1	U	1.18
71-55-6	1,1,1-Trichloroethane	1.18	1	U	1.18
79-34-5	1,1,2,2-Tetrachloroethane	1.18	1	U	1.18
79-00-5	1,1,2-Trichloroethane	1.18	1	U	1.18
76-13-1	1,1,2-Trichlorotrifluoroethane	1.18	1	U	1.18
75-34-3	1,1-Dichloroethane	1.18	1	U	1.18
75-35-4	1,1-Dichloroethene	1.18	1	U	1.18
563-58-6	1,1-Dichloropropene	1.18	1	U	1.18
87-61-6	1,2,3-Trichlorobenzene	1.18	1	UJ	1.18
96-18-4	1,2,3-Trichloropropane	1.18	1	UJ	1.18
120-82-1	1,2,4-Trichlorobenzene	1.18	1	UJ	1.18
95-63-6	1,2,4-Trimethylbenzene	1.18	1	UJ	1.18
96-12-8	1,2-Dibromo-3-Chloropropane	1.18	1	UJ	1.18
106-93-4	1,2-Dibromoethane	1.18	1	U	1.18
95-50-1	1,2-Dichlorobenzene	1.18	1	UJ	1.18
107-06-2	1,2-Dichloroethane	1.18	1	U	1.18
78-87-5	1,2-Dichloropropane	1.18	1	U	1.18
108-67-8	1,3,5-Trimethylbenzene	1.18	1	UJ	1.18
541-73-1	1,3-Dichlorobenzene	1.18	1	UJ	1.18
142-28-9	1,3-Dichloropropane	1.18	1	U	1.18
106-46-7	1,4-Dichlorobenzene	1.18	1	UJ	1.18
594-20-7	2,2-Dichloropropane	1.18	1	U	1.18
78-93-3	2-Butanone	1.18	1	U	1.18
95-49-8	2-Chlorotoluene	1.18	1	UJ	1.18
591-78-6	2-Hexanone	1.18	1	U	1.18
106-43-4	4-Chlorotoluene	1.18	1	UJ	1.18
108-10-1	4-Methyl-2-pentanone	1.18	1	U	1.18
67-64-1	Acetone	1.18	1	U	1.18
71-43-2	Benzene	1.18	1	U	1.18
108-86-1	Bromobenzene	1.18	1	UJ	1.18
74-97-5	Bromochloromethane	1.18	1	U	1.18
75-27-4	Bromodichloromethane	1.18	1	U	1.18
75-25-2	Bromoform	1.18	1	UJ	1.18
74-83-9	Bromomethane	2.36	1	U	2.36
75-15-0	Carbon Disulfide	1.18	1	U	1.18
56-23-5	Carbon Tetrachloride	1.18	1	U	1.18
108-90-7	Chlorobenzene	1.18	1	U	1.18
75-00-3	Chloroethane	1.18	1	UJ	1.18
67-66-3	Chloroform	1.18	1	U	1.18
74-87-3	Chloromethane	1.18	1	U	1.18
156-59-2	Cis-1,2-Dichloroethene	1.18	1	U	1.18
10061-01-5	Cis-1,3-Dichloropropene	1.18	1	U	1.18
124-48-1	Dibromochloromethane	1.18	1	U	1.18
74-95-3	Dibromomethane	1.18	1	U	1.18
75-71-8	Dichlorodifluoromethane	2.36	1	U	2.36
60-29-7	Ethyl Ether	1.18	1	U	1.18

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

Project: LCB Sampling — Field ID: EP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.103 g
Final Vol: 5 mL

Lab ID #: 2304065-22
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 82.88%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.18	1	U	1.18
87-68-3	Hexachlorobutadiene	1.18	1	UJ	1.18
67-72-1	Hexachloroethane	1.18	1	UJ	1.18
98-82-8	Isopropylbenzene (Cumene)	1.18	1	UJ	1.18
179601-23-1	m,p-Xylene	2.36	1	U	2.36
74-88-4	Methyl Iodide	1.18	1	U	1.18
1634-04-4	Methyl t-butyl ether	1.18	1	U	1.18
75-09-2	Methylene Chloride	1.18	1	U	1.18
91-20-3	Naphthalene	1.18	1	UJ	1.18
104-51-8	n-Butylbenzene	1.18	1	UJ	1.18
103-65-1	n-Propylbenzene	1.18	1	UJ	1.18
95-47-6	o-Xylene	1.18	1	U	1.18
76-01-7	Pentachloroethane	1.18	1	UJ	1.18
99-87-6	p-Isopropyltoluene	1.18	1	UJ	1.18
135-98-8	Sec-Butylbenzene	1.18	1	UJ	1.18
100-42-5	Styrene	1.18	1	U	1.18
98-06-6	Tert-Butylbenzene	1.18	1	UJ	1.18
127-18-4	Tetrachloroethene	1.18	1	U	1.18
109-99-9	Tetrahydrofuran	1.18	1	U	1.18
108-88-3	Toluene	1.18	1	U	1.18
156-60-5	Trans-1,2-Dichloroethene	1.18	1	U	1.18
10061-02-6	Trans-1,3-Dichloropropene	1.18	1	U	1.18
110-57-6	Trans-1,4-Dichloro-2-butene	2.36	1	U	2.36
79-01-6	Trichloroethene	1.18	1	U	1.18
75-69-4	Trichlorofluoromethane	1.18	1	U	1.18
75-01-4	Vinyl Chloride	1.18	1	U	1.18

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.1	10.0	111	80-120
17060-07-0	1,2-Dichloroethane-D4	11.5	10.0	115	80-120
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	*p-Bromofluorobenzene*	*7.46*	*10.0*	*75*	*80-120*
2037-26-5	Toluene-D8	10.6	10.0	106	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: EP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.033 g
Final Vol: 5 mL

Lab ID #: 2304065-23
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 84.28%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.47	1	U	1.47
71-55-6	1,1,1-Trichloroethane	1.47	1	U	1.47
79-34-5	1,1,2,2-Tetrachloroethane	1.47	1	U	1.47
79-00-5	1,1,2-Trichloroethane	1.47	1	U	1.47
76-13-1	1,1,2-Trichlorotrifluoroethane	1.47	1	U	1.47
75-34-3	1,1-Dichloroethane	1.47	1	U	1.47
75-35-4	1,1-Dichloroethene	1.47	1	U	1.47
563-58-6	1,1-Dichloropropene	1.47	1	U	1.47
87-61-6	1,2,3-Trichlorobenzene	1.47	1	UJ	1.47
96-18-4	1,2,3-Trichloropropane	1.47	1	UJ	1.47
120-82-1	1,2,4-Trichlorobenzene	1.47	1	UJ	1.47
95-63-6	1,2,4-Trimethylbenzene	1.47	1	UJ	1.47
96-12-8	1,2-Dibromo-3-Chloropropane	1.47	1	UJ	1.47
106-93-4	1,2-Dibromoethane	1.47	1	U	1.47
95-50-1	1,2-Dichlorobenzene	1.47	1	UJ	1.47
107-06-2	1,2-Dichloroethane	1.47	1	U	1.47
78-87-5	1,2-Dichloropropane	1.47	1	U	1.47
108-67-8	1,3,5-Trimethylbenzene	1.47	1	UJ	1.47
541-73-1	1,3-Dichlorobenzene	1.47	1	UJ	1.47
142-28-9	1,3-Dichloropropane	1.47	1	U	1.47
106-46-7	1,4-Dichlorobenzene	1.47	1	UJ	1.47
594-20-7	2,2-Dichloropropane	1.47	1	U	1.47
78-93-3	2-Butanone	1.47	1	U	1.47
95-49-8	2-Chlorotoluene	1.47	1	UJ	1.47
591-78-6	2-Hexanone	1.47	1	U	1.47
106-43-4	4-Chlorotoluene	1.47	1	UJ	1.47
108-10-1	4-Methyl-2-pentanone	1.47	1	U	1.47
67-64-1	Acetone	1.47	1	U	1.47
71-43-2	Benzene	1.47	1	U	1.47
108-86-1	Bromobenzene	1.47	1	UJ	1.47
74-97-5	Bromochloromethane	1.47	1	U	1.47
75-27-4	Bromodichloromethane	1.47	1	U	1.47
75-25-2	Bromoform	1.47	1	UJ	1.47
74-83-9	Bromomethane	2.94	1	U	2.94
75-15-0	Carbon Disulfide	1.47	1	U	1.47
56-23-5	Carbon Tetrachloride	1.47	1	U	1.47
108-90-7	Chlorobenzene	1.47	1	U	1.47
75-00-3	Chloroethane	1.47	1	UJ	1.47
67-66-3	Chloroform	1.47	1	U	1.47
74-87-3	Chloromethane	1.47	1	U	1.47
156-59-2	Cis-1,2-Dichloroethene	1.47	1	U	1.47
10061-01-5	Cis-1,3-Dichloropropene	1.47	1	U	1.47
124-48-1	Dibromochloromethane	1.47	1	U	1.47
74-95-3	Dibromomethane	1.47	1	U	1.47
75-71-8	Dichlorodifluoromethane	2.94	1	U	2.94
60-29-7	Ethyl Ether	1.47	1	U	1.47

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

Project: LCB Sampling

Field ID: EP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.033 g
Final Vol: 5 mL

Lab ID #: 2304065-23
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 84.28%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.47	1	U	1.47
87-68-3	Hexachlorobutadiene	1.47	1	UJ	1.47
67-72-1	Hexachloroethane	1.47	1	UJ	1.47
98-82-8	Isopropylbenzene (Cumene)	1.47	1	UJ	1.47
179601-23-1	m,p-Xylene	2.94	1	U	2.94
74-88-4	Methyl Iodide	1.47	1	U	1.47
1634-04-4	Methyl t-butyl ether	1.47	1	U	1.47
75-09-2	Methylene Chloride	1.47	1	U	1.47
91-20-3	Naphthalene	1.47	1	UJ	1.47
104-51-8	n-Butylbenzene	1.47	1	UJ	1.47
103-65-1	n-Propylbenzene	1.47	1	UJ	1.47
95-47-6	o-Xylene	1.47	1	U	1.47
76-01-7	Pentachloroethane	1.47	1	UJ	1.47
99-87-6	p-Isopropyltoluene	1.47	1	UJ	1.47
135-98-8	Sec-Butylbenzene	1.47	1	UJ	1.47
100-42-5	Styrene	1.47	1	U	1.47
98-06-6	Tert-Butylbenzene	1.47	1	UJ	1.47
127-18-4	Tetrachloroethene	1.47	1	U	1.47
109-99-9	Tetrahydrofuran	1.47	1	U	1.47
108-88-3	Toluene	1.47	1	U	1.47
156-60-5	Trans-1,2-Dichloroethene	1.47	1	U	1.47
10061-02-6	Trans-1,3-Dichloropropene	1.47	1	U	1.47
110-57-6	Trans-1,4-Dichloro-2-butene	2.94	1	U	2.94
79-01-6	Trichloroethene	1.47	1	U	1.47
75-69-4	Trichlorofluoromethane	1.47	1	U	1.47
75-01-4	Vinyl Chloride	1.47	1	U	1.47

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.3	10.0	113	80-120
17060-07-0	1,2-Dichloroethane-D4	11.8	10.0	118	80-120
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	*p-Bromofluorobenzene*	*7.06*	*10.0*	*71*	*80-120*
2037-26-5	Toluene-D8	10.6	10.0	106	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling
Field ID: PSV-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.08 g
Final Vol: 5 mL

Lab ID #: 2304065-24
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 82.20%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.49	1	U	1.49
71-55-6	1,1,1-Trichloroethane	1.49	1	U	1.49
79-34-5	1,1,2,2-Tetrachloroethane	1.49	1	U	1.49
79-00-5	1,1,2-Trichloroethane	1.49	1	U	1.49
76-13-1	1,1,2-Trichlorotrifluoroethane	1.49	1	U	1.49
75-34-3	1,1-Dichloroethane	1.49	1	U	1.49
75-35-4	1,1-Dichloroethene	1.49	1	U	1.49
563-58-6	1,1-Dichloropropene	1.49	1	U	1.49
87-61-6	1,2,3-Trichlorobenzene	1.49	1	UJ	1.49
96-18-4	1,2,3-Trichloropropane	1.49	1	UJ	1.49
120-82-1	1,2,4-Trichlorobenzene	1.49	1	UJ	1.49
95-63-6	1,2,4-Trimethylbenzene	1.49	1	UJ	1.49
96-12-8	1,2-Dibromo-3-Chloropropane	1.49	1	UJ	1.49
106-93-4	1,2-Dibromoethane	1.49	1	U	1.49
95-50-1	1,2-Dichlorobenzene	1.49	1	UJ	1.49
107-06-2	1,2-Dichloroethane	1.49	1	U	1.49
78-87-5	1,2-Dichloropropane	1.49	1	U	1.49
108-67-8	1,3,5-Trimethylbenzene	1.49	1	UJ	1.49
541-73-1	1,3-Dichlorobenzene	1.49	1	UJ	1.49
142-28-9	1,3-Dichloropropane	1.49	1	U	1.49
106-46-7	1,4-Dichlorobenzene	1.49	1	UJ	1.49
594-20-7	2,2-Dichloropropane	1.49	1	U	1.49
78-93-3	2-Butanone	1.49	1	U	1.49
95-49-8	2-Chlorotoluene	1.49	1	UJ	1.49
591-78-6	2-Hexanone	1.49	1	U	1.49
106-43-4	4-Chlorotoluene	1.49	1	UJ	1.49
108-10-1	4-Methyl-2-pentanone	1.49	1	U	1.49
67-64-1	Acetone	1.51	1	U	1.49
71-43-2	Benzene	1.49	1	U	1.49
108-86-1	Bromobenzene	1.49	1	UJ	1.49
74-97-5	Bromochloromethane	1.49	1	U	1.49
75-27-4	Bromodichloromethane	1.49	1	U	1.49
75-25-2	Bromoform	1.49	1	UJ	1.49
74-83-9	Bromomethane	2.98	1	U	2.98
75-15-0	Carbon Disulfide	1.49	1	U	1.49
56-23-5	Carbon Tetrachloride	1.49	1	U	1.49
108-90-7	Chlorobenzene	1.49	1	U	1.49
75-00-3	Chloroethane	1.49	1	UJ	1.49
67-66-3	Chloroform	1.49	1	U	1.49
74-87-3	Chloromethane	1.49	1	U	1.49
156-59-2	Cis-1,2-Dichloroethene	1.49	1	U	1.49
10061-01-5	Cis-1,3-Dichloropropene	1.49	1	U	1.49
124-48-1	Dibromochloromethane	1.49	1	U	1.49
74-95-3	Dibromomethane	1.49	1	U	1.49
75-71-8	Dichlorodifluoromethane	2.98	1	U	2.98
60-29-7	Ethyl Ether	1.49	1	U	1.49

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

Project: LCB Sampling

Field ID: PSV-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.08 g
Final Vol: 5 mL

Lab ID #: 2304065-24
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 82.20%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.49	1	U	1.49
87-68-3	Hexachlorobutadiene	1.49	1	UJ	1.49
67-72-1	Hexachloroethane	1.49	1	UJ	1.49
98-82-8	Isopropylbenzene (Cumene)	1.49	1	UJ	1.49
179601-23-1	m,p-Xylene	2.98	1	U	2.98
74-88-4	Methyl Iodide	1.49	1	U	1.49
1634-04-4	Methyl t-butyl ether	1.49	1	U	1.49
75-09-2	Methylene Chloride	1.49	1	U	1.49
91-20-3	Naphthalene	1.49	1	UJ	1.49
104-51-8	n-Butylbenzene	1.49	1	UJ	1.49
103-65-1	n-Propylbenzene	1.49	1	UJ	1.49
95-47-6	o-Xylene	1.49	1	U	1.49
76-01-7	Pentachloroethane	1.49	1	UJ	1.49
99-87-6	p-Isopropyltoluene	1.49	1	UJ	1.49
135-98-8	Sec-Butylbenzene	1.49	1	UJ	1.49
100-42-5	Styrene	1.49	1	U	1.49
98-06-6	Tert-Butylbenzene	1.49	1	UJ	1.49
127-18-4	Tetrachloroethene	1.49	1	U	1.49
109-99-9	Tetrahydrofuran	1.49	1	U	1.49
108-88-3	Toluene	1.49	1	U	1.49
156-60-5	Trans-1,2-Dichloroethene	1.49	1	U	1.49
10061-02-6	Trans-1,3-Dichloropropene	1.49	1	U	1.49
110-57-6	Trans-1,4-Dichloro-2-butene	2.98	1	U	2.98
79-01-6	Trichloroethene	1.49	1	U	1.49
75-69-4	Trichlorofluoromethane	1.49	1	U	1.49
75-01-4	Vinyl Chloride	1.49	1	U	1.49

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.5	10.0	115	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.2*	*10.0*	*122*	*80-120*
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	*p-Bromofluorobenzene*	*6.38*	*10.0*	*64*	*80-120*
2037-26-5	Toluene-D8	11.5	10.0	115	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: PSV-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.642 g
Final Vol: 5 mL

Lab ID #: 2304065-25
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 81.02%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.09	1	U	1.09
71-55-6	1,1,1-Trichloroethane	1.09	1	U	1.09
79-34-5	1,1,2,2-Tetrachloroethane	1.09	1	U	1.09
79-00-5	1,1,2-Trichloroethane	1.09	1	U	1.09
76-13-1	1,1,2-Trichlorotrifluoroethane	1.09	1	U	1.09
75-34-3	1,1-Dichloroethane	1.09	1	U	1.09
75-35-4	1,1-Dichloroethene	1.09	1	U	1.09
563-58-6	1,1-Dichloropropene	1.09	1	U	1.09
87-61-6	1,2,3-Trichlorobenzene	1.09	1	UJ	1.09
96-18-4	1,2,3-Trichloropropane	1.09	1	UJ	1.09
120-82-1	1,2,4-Trichlorobenzene	1.09	1	UJ	1.09
95-63-6	1,2,4-Trimethylbenzene	1.09	1	UJ	1.09
96-12-8	1,2-Dibromo-3-Chloropropane	1.09	1	UJ	1.09
106-93-4	1,2-Dibromoethane	1.09	1	U	1.09
95-50-1	1,2-Dichlorobenzene	1.09	1	UJ	1.09
107-06-2	1,2-Dichloroethane	1.09	1	U	1.09
78-87-5	1,2-Dichloropropane	1.09	1	U	1.09
108-67-8	1,3,5-Trimethylbenzene	1.09	1	UJ	1.09
541-73-1	1,3-Dichlorobenzene	1.09	1	UJ	1.09
142-28-9	1,3-Dichloropropane	1.09	1	U	1.09
106-46-7	1,4-Dichlorobenzene	1.09	1	UJ	1.09
594-20-7	2,2-Dichloropropane	1.09	1	U	1.09
78-93-3	2-Butanone	1.09	1	U	1.09
95-49-8	2-Chlorotoluene	1.09	1	UJ	1.09
591-78-6	2-Hexanone	1.09	1	U	1.09
106-43-4	4-Chlorotoluene	1.09	1	UJ	1.09
108-10-1	4-Methyl-2-pentanone	1.09	1	U	1.09
67-64-1	Acetone	1.09	1	U	1.09
71-43-2	Benzene	1.09	1	U	1.09
108-86-1	Bromobenzene	1.09	1	UJ	1.09
74-97-5	Bromochloromethane	1.09	1	U	1.09
75-27-4	Bromodichloromethane	1.09	1	U	1.09
75-25-2	Bromoform	1.09	1	UJ	1.09
74-83-9	Bromomethane	2.19	1	U	2.19
75-15-0	Carbon Disulfide	1.09	1	U	1.09
56-23-5	Carbon Tetrachloride	1.09	1	U	1.09
108-90-7	Chlorobenzene	1.09	1	U	1.09
75-00-3	Chloroethane	1.09	1	UJ	1.09
67-66-3	Chloroform	1.09	1	U	1.09
74-87-3	Chloromethane	1.09	1	U	1.09
156-59-2	Cis-1,2-Dichloroethene	1.09	1	U	1.09
10061-01-5	Cis-1,3-Dichloropropene	1.09	1	U	1.09
124-48-1	Dibromochloromethane	1.09	1	U	1.09
74-95-3	Dibromomethane	1.09	1	U	1.09
75-71-8	Dichlorodifluoromethane	2.19	1	U	2.19
60-29-7	Ethyl Ether	1.09	1	U	1.09

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

Project: LCB Sampling — Field ID: PSV-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.642 g
Final Vol: 5 mL

Lab ID #: 2304065-25
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 81.02%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.09	1	U	1.09
87-68-3	Hexachlorobutadiene	1.09	1	UJ	1.09
67-72-1	Hexachloroethane	1.09	1	UJ	1.09
98-82-8	Isopropylbenzene (Cumene)	1.09	1	UJ	1.09
179601-23-1	m,p-Xylene	2.19	1	U	2.19
74-88-4	Methyl Iodide	1.09	1	U	1.09
1634-04-4	Methyl t-butyl ether	1.09	1	U	1.09
75-09-2	Methylene Chloride	1.09	1	U	1.09
91-20-3	Naphthalene	1.09	1	UJ	1.09
104-51-8	n-Butylbenzene	1.09	1	UJ	1.09
103-65-1	n-Propylbenzene	1.09	1	UJ	1.09
95-47-6	o-Xylene	1.09	1	U	1.09
76-01-7	Pentachloroethane	1.09	1	UJ	1.09
99-87-6	p-Isopropyltoluene	1.09	1	UJ	1.09
135-98-8	Sec-Butylbenzene	1.09	1	UJ	1.09
100-42-5	Styrene	1.09	1	U	1.09
98-06-6	Tert-Butylbenzene	1.09	1	UJ	1.09
127-18-4	Tetrachloroethene	1.09	1	U	1.09
109-99-9	Tetrahydrofuran	1.09	1	U	1.09
108-88-3	Toluene	1.09	1	U	1.09
156-60-5	Trans-1,2-Dichloroethene	1.09	1	U	1.09
10061-02-6	Trans-1,3-Dichloropropene	1.09	1	U	1.09
110-57-6	Trans-1,4-Dichloro-2-butene	2.19	1	U	2.19
79-01-6	Trichloroethene	1.09	1	U	1.09
75-69-4	Trichlorofluoromethane	1.09	1	U	1.09
75-01-4	Vinyl Chloride	1.09	1	U	1.09

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.4	10.0	114	80-120
17060-07-0	1,2-Dichloroethane-D4	12.0	10.0	120	80-120
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	*p-Bromofluorobenzene*	*6.69*	*10.0*	*67*	*80-120*
2037-26-5	Toluene-D8	11.3	10.0	113	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: SLS-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.249 g
Final Vol: 5 mL

Lab ID #: 2304065-26
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.78%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.46	1	UJ	1.46
71-55-6	1,1,1-Trichloroethane	1.46	1	UJ	1.46
79-34-5	1,1,2,2-Tetrachloroethane	1.46	1	UJ	1.46
79-00-5	1,1,2-Trichloroethane	1.46	1	UJ	1.46
76-13-1	1,1,2-Trichlorotrifluoroethane	1.46	1	UJ	1.46
75-34-3	1,1-Dichloroethane	1.46	1	UJ	1.46
75-35-4	1,1-Dichloroethene	1.46	1	UJ	1.46
563-58-6	1,1-Dichloropropene	1.46	1	UJ	1.46
87-61-6	1,2,3-Trichlorobenzene	1.46	1	UJ	1.46
96-18-4	1,2,3-Trichloropropane	1.46	1	UJ	1.46
120-82-1	1,2,4-Trichlorobenzene	1.46	1	UJ	1.46
95-63-6	1,2,4-Trimethylbenzene	1.46	1	UJ	1.46
96-12-8	1,2-Dibromo-3-Chloropropane	1.46	1	UJ	1.46
106-93-4	1,2-Dibromoethane	1.46	1	UJ	1.46
95-50-1	1,2-Dichlorobenzene	1.46	1	UJ	1.46
107-06-2	1,2-Dichloroethane	1.46	1	UJ	1.46
78-87-5	1,2-Dichloropropane	1.46	1	UJ	1.46
108-67-8	1,3,5-Trimethylbenzene	1.46	1	UJ	1.46
541-73-1	1,3-Dichlorobenzene	1.46	1	UJ	1.46
142-28-9	1,3-Dichloropropane	1.46	1	UJ	1.46
106-46-7	1,4-Dichlorobenzene	1.46	1	UJ	1.46
594-20-7	2,2-Dichloropropane	1.46	1	UJ	1.46
78-93-3	2-Butanone	1.46	1	UJ	1.46
95-49-8	2-Chlorotoluene	1.46	1	UJ	1.46
591-78-6	2-Hexanone	1.46	1	UJ	1.46
106-43-4	4-Chlorotoluene	1.46	1	UJ	1.46
108-10-1	4-Methyl-2-pentanone	1.46	1	UJ	1.46
67-64-1	Acetone	3.11	1	UJ	1.46
71-43-2	Benzene	1.46	1	UJ	1.46
108-86-1	Bromobenzene	1.46	1	UJ	1.46
74-97-5	Bromochloromethane	1.46	1	UJ	1.46
75-27-4	Bromodichloromethane	1.46	1	UJ	1.46
75-25-2	Bromoform	1.46	1	UJ	1.46
74-83-9	Bromomethane	2.91	1	UJ	2.91
75-15-0	Carbon Disulfide	1.46	1	UJ	1.46
56-23-5	Carbon Tetrachloride	1.46	1	UJ	1.46
108-90-7	Chlorobenzene	1.46	1	UJ	1.46
75-00-3	Chloroethane	1.46	1	UJ	1.46
67-66-3	Chloroform	1.46	1	UJ	1.46
74-87-3	Chloromethane	1.46	1	UJ	1.46
156-59-2	Cis-1,2-Dichloroethene	1.46	1	UJ	1.46
10061-01-5	Cis-1,3-Dichloropropene	1.46	1	UJ	1.46
124-48-1	Dibromochloromethane	1.46	1	UJ	1.46
74-95-3	Dibromomethane	1.46	1	UJ	1.46
75-71-8	Dichlorodifluoromethane	2.91	1	UJ	2.91
60-29-7	Ethyl Ether	1.46	1	UJ	1.46

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

Project: LCB Sampling **Field ID: SLS-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.249 g
Final Vol: 5 mL

Lab ID #: 2304065-26
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.78%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.46	1	UJ	1.46
87-68-3	Hexachlorobutadiene	1.46	1	UJ	1.46
67-72-1	Hexachloroethane	1.46	1	UJ	1.46
98-82-8	Isopropylbenzene (Cumene)	1.46	1	UJ	1.46
179601-23-1	m,p-Xylene	2.91	1	UJ	2.91
74-88-4	Methyl Iodide	1.46	1	UJ	1.46
1634-04-4	Methyl t-butyl ether	1.46	1	UJ	1.46
75-09-2	Methylene Chloride	1.46	1	UJ	1.46
91-20-3	Naphthalene	1.46	1	UJ	1.46
104-51-8	n-Butylbenzene	1.46	1	UJ	1.46
103-65-1	n-Propylbenzene	1.46	1	UJ	1.46
95-47-6	o-Xylene	1.46	1	UJ	1.46
76-01-7	Pentachloroethane	1.46	1	UJ	1.46
99-87-6	p-Isopropyltoluene	1.46	1	UJ	1.46
135-98-8	Sec-Butylbenzene	1.46	1	UJ	1.46
100-42-5	Styrene	1.46	1	UJ	1.46
98-06-6	Tert-Butylbenzene	1.46	1	UJ	1.46
127-18-4	Tetrachloroethene	1.46	1	UJ	1.46
109-99-9	Tetrahydrofuran	1.46	1	UJ	1.46
108-88-3	Toluene	1.46	1	UJ	1.46
156-60-5	Trans-1,2-Dichloroethene	1.46	1	UJ	1.46
10061-02-6	Trans-1,3-Dichloropropene	1.46	1	UJ	1.46
110-57-6	Trans-1,4-Dichloro-2-butene	2.91	1	UJ	2.91
79-01-6	Trichloroethene	1.46	1	UJ	1.46
75-69-4	Trichlorofluoromethane	1.46	1	UJ	1.46
75-01-4	Vinyl Chloride	1.46	1	UJ	1.46

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*13.0*	*10.0*	*130*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*15.2*	*10.0*	*152*	*80-120*
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	*p-Bromofluorobenzene*	*6.94*	*10.0*	*69*	*80-120*
2037-26-5	Toluene-D8	9.93	10.0	99	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: SLS-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.372 g
Final Vol: 5 mL

Lab ID #: 2304065-27
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.05%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.43	1	U	1.43
71-55-6	1,1,1-Trichloroethane	1.43	1	U	1.43
79-34-5	1,1,2,2-Tetrachloroethane	1.43	1	U	1.43
79-00-5	1,1,2-Trichloroethane	1.43	1	U	1.43
76-13-1	1,1,2-Trichlorotrifluoroethane	1.43	1	U	1.43
75-34-3	1,1-Dichloroethane	1.43	1	U	1.43
75-35-4	1,1-Dichloroethene	1.43	1	U	1.43
563-58-6	1,1-Dichloropropene	1.43	1	U	1.43
87-61-6	1,2,3-Trichlorobenzene	1.43	1	UJ	1.43
96-18-4	1,2,3-Trichloropropane	1.43	1	UJ	1.43
120-82-1	1,2,4-Trichlorobenzene	1.43	1	UJ	1.43
95-63-6	1,2,4-Trimethylbenzene	1.43	1	UJ	1.43
96-12-8	1,2-Dibromo-3-Chloropropane	1.43	1	UJ	1.43
106-93-4	1,2-Dibromoethane	1.43	1	U	1.43
95-50-1	1,2-Dichlorobenzene	1.43	1	UJ	1.43
107-06-2	1,2-Dichloroethane	1.43	1	U	1.43
78-87-5	1,2-Dichloropropane	1.43	1	U	1.43
108-67-8	1,3,5-Trimethylbenzene	1.43	1	UJ	1.43
541-73-1	1,3-Dichlorobenzene	1.43	1	UJ	1.43
142-28-9	1,3-Dichloropropane	1.43	1	U	1.43
106-46-7	1,4-Dichlorobenzene	1.43	1	UJ	1.43
594-20-7	2,2-Dichloropropane	1.43	1	U	1.43
78-93-3	2-Butanone	1.43	1	U	1.43
95-49-8	2-Chlorotoluene	1.43	1	UJ	1.43
591-78-6	2-Hexanone	1.43	1	U	1.43
106-43-4	4-Chlorotoluene	1.43	1	UJ	1.43
108-10-1	4-Methyl-2-pentanone	1.43	1	U	1.43
67-64-1	Acetone	1.43	1	U	1.43
71-43-2	Benzene	1.43	1	U	1.43
108-86-1	Bromobenzene	1.43	1	UJ	1.43
74-97-5	Bromochloromethane	1.43	1	U	1.43
75-27-4	Bromodichloromethane	1.43	1	U	1.43
75-25-2	Bromoform	1.43	1	UJ	1.43
74-83-9	Bromomethane	2.86	1	U	2.86
75-15-0	Carbon Disulfide	1.43	1	U	1.43
56-23-5	Carbon Tetrachloride	1.43	1	U	1.43
108-90-7	Chlorobenzene	1.43	1	U	1.43
75-00-3	Chloroethane	1.43	1	UJ	1.43
67-66-3	Chloroform	1.43	1	U	1.43
74-87-3	Chloromethane	1.43	1	U	1.43
156-59-2	Cis-1,2-Dichloroethene	1.43	1	U	1.43
10061-01-5	Cis-1,3-Dichloropropene	1.43	1	U	1.43
124-48-1	Dibromochloromethane	1.43	1	U	1.43
74-95-3	Dibromomethane	1.43	1	U	1.43
75-71-8	Dichlorodifluoromethane	2.86	1	U	2.86
60-29-7	Ethyl Ether	1.43	1	U	1.43

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

Project: LCB Sampling **Field ID: SLS-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.372 g
Final Vol: 5 mL

Lab ID #: 2304065-27
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.05%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.43	1	U	1.43
87-68-3	Hexachlorobutadiene	1.43	1	UJ	1.43
67-72-1	Hexachloroethane	1.43	1	UJ	1.43
98-82-8	Isopropylbenzene (Cumene)	1.43	1	UJ	1.43
179601-23-1	m,p-Xylene	2.86	1	U	2.86
74-88-4	Methyl Iodide	1.43	1	U	1.43
1634-04-4	Methyl t-butyl ether	1.43	1	U	1.43
75-09-2	Methylene Chloride	1.43	1	U	1.43
91-20-3	Naphthalene	1.43	1	UJ	1.43
104-51-8	n-Butylbenzene	1.43	1	UJ	1.43
103-65-1	n-Propylbenzene	1.43	1	UJ	1.43
95-47-6	o-Xylene	1.43	1	U	1.43
76-01-7	Pentachloroethane	1.43	1	UJ	1.43
99-87-6	p-Isopropyltoluene	1.43	1	UJ	1.43
135-98-8	Sec-Butylbenzene	1.43	1	UJ	1.43
100-42-5	Styrene	1.43	1	U	1.43
98-06-6	Tert-Butylbenzene	1.43	1	UJ	1.43
127-18-4	Tetrachloroethene	1.43	1	U	1.43
109-99-9	Tetrahydrofuran	1.43	1	U	1.43
108-88-3	Toluene	1.43	1	U	1.43
156-60-5	Trans-1,2-Dichloroethene	1.43	1	U	1.43
10061-02-6	Trans-1,3-Dichloropropene	1.43	1	U	1.43
110-57-6	Trans-1,4-Dichloro-2-butene	2.86	1	U	2.86
79-01-6	Trichloroethene	1.43	1	U	1.43
75-69-4	Trichlorofluoromethane	1.43	1	U	1.43
75-01-4	Vinyl Chloride	1.43	1	U	1.43

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.4	10.0	114	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.2*	*10.0*	*122*	*80-120*
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	*p-Bromofluorobenzene*	*6.56*	*10.0*	*66*	*80-120*
2037-26-5	Toluene-D8	11.4	10.0	114	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.508 g
Final Vol: 5 mL

Lab ID #: 2304065-28
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 77.09%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.44	1	UJ	1.44
71-55-6	1,1,1-Trichloroethane	1.44	1	UJ	1.44
79-34-5	1,1,2,2-Tetrachloroethane	1.44	1	UJ	1.44
79-00-5	1,1,2-Trichloroethane	1.44	1	UJ	1.44
76-13-1	1,1,2-Trichlorotrifluoroethane	1.44	1	U	1.44
75-34-3	1,1-Dichloroethane	1.44	1	U	1.44
75-35-4	1,1-Dichloroethene	1.44	1	U	1.44
563-58-6	1,1-Dichloropropene	1.44	1	UJ	1.44
87-61-6	1,2,3-Trichlorobenzene	1.44	1	UJ	1.44
96-18-4	1,2,3-Trichloropropane	1.44	1	UJ	1.44
120-82-1	1,2,4-Trichlorobenzene	1.44	1	UJ	1.44
95-63-6	1,2,4-Trimethylbenzene	1.44	1	U	1.44
96-12-8	1,2-Dibromo-3-Chloropropane	1.44	1	UJ	1.44
106-93-4	1,2-Dibromoethane	1.44	1	UJ	1.44
95-50-1	1,2-Dichlorobenzene	1.44	1	UJ	1.44
107-06-2	1,2-Dichloroethane	1.44	1	U	1.44
78-87-5	1,2-Dichloropropane	1.44	1	UJ	1.44
108-67-8	1,3,5-Trimethylbenzene	1.44	1	UJ	1.44
541-73-1	1,3-Dichlorobenzene	1.44	1	UJ	1.44
142-28-9	1,3-Dichloropropane	1.44	1	UJ	1.44
106-46-7	1,4-Dichlorobenzene	1.44	1	UJ	1.44
594-20-7	2,2-Dichloropropane	1.44	1	U	1.44
78-93-3	2-Butanone	1.44	1	U	1.44
95-49-8	2-Chlorotoluene	1.44	1	UJ	1.44
591-78-6	2-Hexanone	1.44	1	UJ	1.44
106-43-4	4-Chlorotoluene	1.44	1	UJ	1.44
108-10-1	4-Methyl-2-pentanone	1.44	1	UJ	1.44
67-64-1	Acetone	1.67	1	U	1.44
71-43-2	Benzene	1.44	1	UJ	1.44
108-86-1	Bromobenzene	1.44	1	UJ	1.44
74-97-5	Bromochloromethane	1.44	1	U	1.44
75-27-4	Bromodichloromethane	1.44	1	UJ	1.44
75-25-2	Bromoform	1.44	1	UJ	1.44
74-83-9	Bromomethane	2.88	1	U	2.88
75-15-0	Carbon Disulfide	1.44	1	U	1.44
56-23-5	Carbon Tetrachloride	1.44	1	UJ	1.44
108-90-7	Chlorobenzene	1.44	1	UJ	1.44
75-00-3	Chloroethane	1.44	1	UJ	1.44
67-66-3	Chloroform	1.44	1	U	1.44
74-87-3	Chloromethane	1.44	1	U	1.44
156-59-2	Cis-1,2-Dichloroethene	1.44	1	U	1.44
10061-01-5	Cis-1,3-Dichloropropene	1.44	1	UJ	1.44
124-48-1	Dibromochloromethane	1.44	1	UJ	1.44
74-95-3	Dibromomethane	1.44	1	UJ	1.44
75-71-8	Dichlorodifluoromethane	2.88	1	U	2.88
60-29-7	Ethyl Ether	1.44	1	U	1.44

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

Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.508 g
Final Vol: 5 mL

Lab ID #: 2304065-28
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 77.09%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.44	1	UJ	1.44
87-68-3	Hexachlorobutadiene	1.44	1	UJ	1.44
67-72-1	Hexachloroethane	1.44	1	UJ	1.44
98-82-8	Isopropylbenzene (Cumene)	1.44	1	UJ	1.44
179601-23-1	m,p-Xylene	2.88	1	UJ	2.88
74-88-4	Methyl Iodide	1.44	1	U	1.44
1634-04-4	Methyl t-butyl ether	1.44	1	U	1.44
75-09-2	Methylene Chloride	1.44	1	U	1.44
91-20-3	Naphthalene	1.44	1	UJ	1.44
104-51-8	n-Butylbenzene	1.44	1	UJ	1.44
103-65-1	n-Propylbenzene	1.44	1	UJ	1.44
95-47-6	o-Xylene	1.44	1	UJ	1.44
76-01-7	Pentachloroethane	1.44	1	UJ	1.44
99-87-6	p-Isopropyltoluene	1.44	1	UJ	1.44
135-98-8	Sec-Butylbenzene	1.44	1	UJ	1.44
100-42-5	Styrene	1.44	1	UJ	1.44
98-06-6	Tert-Butylbenzene	1.44	1	UJ	1.44
127-18-4	Tetrachloroethene	1.44	1	UJ	1.44
109-99-9	Tetrahydrofuran	1.44	1	U	1.44
108-88-3	Toluene	1.44	1	UJ	1.44
156-60-5	Trans-1,2-Dichloroethene	1.44	1	U	1.44
10061-02-6	Trans-1,3-Dichloropropene	1.44	1	UJ	1.44
110-57-6	Trans-1,4-Dichloro-2-butene	2.88	1	UJ	2.88
79-01-6	Trichloroethene	1.44	1	UJ	1.44
75-69-4	Trichlorofluoromethane	1.44	1	U	1.44
75-01-4	Vinyl Chloride	1.44	1	U	1.44

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.9	10.0	119	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.8*	*10.0*	*128*	*80-120*
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	*p-Bromofluorobenzene*	*6.47*	*10.0*	*65*	*80-120*
2037-26-5	Toluene-D8	11.5	10.0	115	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: AT-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 3.809 g
Final Vol: 5 mL

Lab ID #: 2304065-29
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 75.03%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.75	1	UJ	1.75
71-55-6	1,1,1-Trichloroethane	1.75	1	UJ	1.75
79-34-5	1,1,2,2-Tetrachloroethane	1.75	1	UJ	1.75
79-00-5	1,1,2-Trichloroethane	1.75	1	UJ	1.75
76-13-1	1,1,2-Trichlorotrifluoroethane	1.75	1	UJ	1.75
75-34-3	1,1-Dichloroethane	1.75	1	UJ	1.75
75-35-4	1,1-Dichloroethene	1.75	1	UJ	1.75
563-58-6	1,1-Dichloropropene	1.75	1	UJ	1.75
87-61-6	1,2,3-Trichlorobenzene		1	REJ	
96-18-4	1,2,3-Trichloropropane		1	REJ	
120-82-1	1,2,4-Trichlorobenzene		1	REJ	
95-63-6	1,2,4-Trimethylbenzene		1	REJ	
96-12-8	1,2-Dibromo-3-Chloropropane		1	REJ	
106-93-4	1,2-Dibromoethane	1.75	1	UJ	1.75
95-50-1	1,2-Dichlorobenzene		1	REJ	
107-06-2	1,2-Dichloroethane	1.75	1	UJ	1.75
78-87-5	1,2-Dichloropropane	1.75	1	UJ	1.75
108-67-8	1,3,5-Trimethylbenzene		1	REJ	
541-73-1	1,3-Dichlorobenzene		1	REJ	
142-28-9	1,3-Dichloropropane	1.75	1	UJ	1.75
106-46-7	1,4-Dichlorobenzene		1	REJ	
594-20-7	2,2-Dichloropropane	1.75	1	UJ	1.75
78-93-3	2-Butanone	1.75	1	UJ	1.75
95-49-8	2-Chlorotoluene		1	REJ	
591-78-6	2-Hexanone	1.75	1	UJ	1.75
106-43-4	4-Chlorotoluene		1	REJ	
108-10-1	4-Methyl-2-pentanone	1.75	1	UJ	1.75
67-64-1	Acetone	1.75	1	UJ	1.75
71-43-2	Benzene	1.75	1	UJ	1.75
108-86-1	Bromobenzene		1	REJ	
74-97-5	Bromochloromethane	1.75	1	UJ	1.75
75-27-4	Bromodichloromethane	1.75	1	UJ	1.75
75-25-2	Bromoform		1	REJ	
74-83-9	Bromomethane	3.50	1	UJ	3.50
75-15-0	Carbon Disulfide	1.75	1	UJ	1.75
56-23-5	Carbon Tetrachloride	1.75	1	UJ	1.75
108-90-7	Chlorobenzene	1.75	1	UJ	1.75
75-00-3	Chloroethane	1.75	1	UJ	1.75
67-66-3	Chloroform	1.75	1	UJ	1.75
74-87-3	Chloromethane	1.75	1	UJ	1.75
156-59-2	Cis-1,2-Dichloroethene	1.75	1	UJ	1.75
10061-01-5	Cis-1,3-Dichloropropene	1.75	1	UJ	1.75
124-48-1	Dibromochloromethane	1.75	1	UJ	1.75
74-95-3	Dibromomethane	1.75	1	UJ	1.75
75-71-8	Dichlorodifluoromethane	3.50	1	UJ	3.50
60-29-7	Ethyl Ether	1.75	1	UJ	1.75

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

Project: LCB Sampling **Field ID: AT-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 3.809 g
Final Vol: 5 mL

Lab ID #: 2304065-29
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 75.03%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.75	1	UJ	1.75
87-68-3	Hexachlorobutadiene		1	REJ	
67-72-1	Hexachloroethane		1	REJ	
98-82-8	Isopropylbenzene (Cumene)		1	REJ	
179601-23-1	m,p-Xylene	3.50	1	UJ	3.50
74-88-4	Methyl Iodide	1.75	1	UJ	1.75
1634-04-4	Methyl t-butyl ether	1.75	1	UJ	1.75
75-09-2	Methylene Chloride	1.75	1	UJ	1.75
91-20-3	Naphthalene		1	REJ	
104-51-8	n-Butylbenzene		1	REJ	
103-65-1	n-Propylbenzene		1	REJ	
95-47-6	o-Xylene	1.75	1	UJ	1.75
76-01-7	Pentachloroethane		1	REJ	
99-87-6	p-Isopropyltoluene		1	REJ	
135-98-8	Sec-Butylbenzene		1	REJ	
100-42-5	Styrene	1.75	1	UJ	1.75
98-06-6	Tert-Butylbenzene		1	REJ	
127-18-4	Tetrachloroethene	1.75	1	UJ	1.75
109-99-9	Tetrahydrofuran	1.75	1	UJ	1.75
108-88-3	Toluene	1.75	1	UJ	1.75
156-60-5	Trans-1,2-Dichloroethene	1.75	1	UJ	1.75
10061-02-6	Trans-1,3-Dichloropropene	1.75	1	UJ	1.75
110-57-6	Trans-1,4-Dichloro-2-butene		1	REJ	
79-01-6	Trichloroethene	1.75	1	UJ	1.75
75-69-4	Trichlorofluoromethane	1.75	1	UJ	1.75
75-01-4	Vinyl Chloride	1.75	1	UJ	1.75

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*13.3*	*10.0*	*133*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*16.2*	*10.0*	*162*	*80-120*
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	*p-Bromofluorobenzene*	*5.70*	*10.0*	*57*	*80-120*
2037-26-5	Toluene-D8	10.9	10.0	109	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: W-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.151 g
Final Vol: 5 mL

Lab ID #: 2304065-30
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 91.86%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.31	1	U	1.31
71-55-6	1,1,1-Trichloroethane	1.31	1	U	1.31
79-34-5	1,1,2,2-Tetrachloroethane	1.31	1	U	1.31
79-00-5	1,1,2-Trichloroethane	1.31	1	U	1.31
76-13-1	1,1,2-Trichlorotrifluoroethane	1.31	1	U	1.31
75-34-3	1,1-Dichloroethane	1.31	1	U	1.31
75-35-4	1,1-Dichloroethene	1.31	1	U	1.31
563-58-6	1,1-Dichloropropene	1.31	1	U	1.31
87-61-6	1,2,3-Trichlorobenzene	1.31	1	UJ	1.31
96-18-4	1,2,3-Trichloropropane	1.31	1	UJ	1.31
120-82-1	1,2,4-Trichlorobenzene	1.31	1	UJ	1.31
95-63-6	1,2,4-Trimethylbenzene	1.31	1	UJ	1.31
96-12-8	1,2-Dibromo-3-Chloropropane	1.31	1	UJ	1.31
106-93-4	1,2-Dibromoethane	1.31	1	U	1.31
95-50-1	1,2-Dichlorobenzene	1.31	1	UJ	1.31
107-06-2	1,2-Dichloroethane	1.31	1	U	1.31
78-87-5	1,2-Dichloropropane	1.31	1	U	1.31
108-67-8	1,3,5-Trimethylbenzene	1.31	1	UJ	1.31
541-73-1	1,3-Dichlorobenzene	1.31	1	UJ	1.31
142-28-9	1,3-Dichloropropane	1.31	1	U	1.31
106-46-7	1,4-Dichlorobenzene	1.31	1	UJ	1.31
594-20-7	2,2-Dichloropropane	1.31	1	U	1.31
78-93-3	2-Butanone	1.31	1	U	1.31
95-49-8	2-Chlorotoluene	1.31	1	UJ	1.31
591-78-6	2-Hexanone	1.31	1	U	1.31
106-43-4	4-Chlorotoluene	1.31	1	UJ	1.31
108-10-1	4-Methyl-2-pentanone	1.31	1	U	1.31
67-64-1	Acetone	1.31	1	U	1.31
71-43-2	Benzene	1.31	1	U	1.31
108-86-1	Bromobenzene	1.31	1	UJ	1.31
74-97-5	Bromochloromethane	1.31	1	U	1.31
75-27-4	Bromodichloromethane	1.31	1	U	1.31
75-25-2	Bromoform	1.31	1	UJ	1.31
74-83-9	Bromomethane	2.62	1	U	2.62
75-15-0	Carbon Disulfide	1.31	1	U	1.31
56-23-5	Carbon Tetrachloride	1.31	1	U	1.31
108-90-7	Chlorobenzene	1.31	1	U	1.31
75-00-3	Chloroethane	1.31	1	UJ	1.31
67-66-3	Chloroform	1.31	1	U	1.31
74-87-3	Chloromethane	1.31	1	U	1.31
156-59-2	Cis-1,2-Dichloroethene	1.31	1	U	1.31
10061-01-5	Cis-1,3-Dichloropropene	1.31	1	U	1.31
124-48-1	Dibromochloromethane	1.31	1	U	1.31
74-95-3	Dibromomethane	1.31	1	U	1.31
75-71-8	Dichlorodifluoromethane	2.62	1	U	2.62
60-29-7	Ethyl Ether	1.31	1	U	1.31

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

Project: LCB Sampling — Field ID: W-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.151 g
Final Vol: 5 mL

Lab ID #: 2304065-30
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 91.86%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.31	1	U	1.31
87-68-3	Hexachlorobutadiene	1.31	1	UJ	1.31
67-72-1	Hexachloroethane	1.31	1	UJ	1.31
98-82-8	Isopropylbenzene (Cumene)	1.31	1	UJ	1.31
179601-23-1	m,p-Xylene	2.62	1	U	2.62
74-88-4	Methyl Iodide	1.31	1	U	1.31
1634-04-4	Methyl t-butyl ether	1.31	1	U	1.31
75-09-2	Methylene Chloride	1.31	1	U	1.31
91-20-3	Naphthalene	1.31	1	UJ	1.31
104-51-8	n-Butylbenzene	1.31	1	UJ	1.31
103-65-1	n-Propylbenzene	1.31	1	UJ	1.31
95-47-6	o-Xylene	1.31	1	U	1.31
76-01-7	Pentachloroethane	1.31	1	UJ	1.31
99-87-6	p-Isopropyltoluene	1.31	1	UJ	1.31
135-98-8	Sec-Butylbenzene	1.31	1	UJ	1.31
100-42-5	Styrene	1.31	1	U	1.31
98-06-6	Tert-Butylbenzene	1.31	1	UJ	1.31
127-18-4	Tetrachloroethene	1.31	1	U	1.31
109-99-9	Tetrahydrofuran	1.31	1	U	1.31
108-88-3	Toluene	1.31	1	U	1.31
156-60-5	Trans-1,2-Dichloroethene	1.31	1	U	1.31
10061-02-6	Trans-1,3-Dichloropropene	1.31	1	U	1.31
110-57-6	Trans-1,4-Dichloro-2-butene	2.62	1	U	2.62
79-01-6	Trichloroethene	1.31	1	U	1.31
75-69-4	Trichlorofluoromethane	1.31	1	U	1.31
75-01-4	Vinyl Chloride	1.31	1	U	1.31

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.0	10.0	110	80-120
17060-07-0	1,2-Dichloroethane-D4	11.8	10.0	118	80-120
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	*p-Bromofluorobenzene*	*7.12*	*10.0*	*71*	*80-120*
2037-26-5	Toluene-D8	10.6	10.0	106	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: W-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.371 g
Final Vol: 5 mL

Lab ID #: 2304065-31
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.80%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.06	1	UJ	1.06
71-55-6	1,1,1-Trichloroethane	1.06	1	UJ	1.06
79-34-5	1,1,2,2-Tetrachloroethane	1.06	1	UJ	1.06
79-00-5	1,1,2-Trichloroethane	1.06	1	UJ	1.06
76-13-1	1,1,2-Trichlorotrifluoroethane	1.06	1	U	1.06
75-34-3	1,1-Dichloroethane	1.06	1	U	1.06
75-35-4	1,1-Dichloroethene	1.06	1	U	1.06
563-58-6	1,1-Dichloropropene	1.06	1	UJ	1.06
87-61-6	1,2,3-Trichlorobenzene	1.06	1	UJ	1.06
96-18-4	1,2,3-Trichloropropane	1.06	1	UJ	1.06
120-82-1	1,2,4-Trichlorobenzene	1.06	1	UJ	1.06
95-63-6	1,2,4-Trimethylbenzene	1.06	1	UJ	1.06
96-12-8	1,2-Dibromo-3-Chloropropane	1.06	1	UJ	1.06
106-93-4	1,2-Dibromoethane	1.06	1	UJ	1.06
95-50-1	1,2-Dichlorobenzene	1.06	1	UJ	1.06
107-06-2	1,2-Dichloroethane	1.06	1	U	1.06
78-87-5	1,2-Dichloropropane	1.06	1	UJ	1.06
108-67-8	1,3,5-Trimethylbenzene	1.06	1	UJ	1.06
541-73-1	1,3-Dichlorobenzene	1.06	1	UJ	1.06
142-28-9	1,3-Dichloropropane	1.06	1	UJ	1.06
106-46-7	1,4-Dichlorobenzene	1.06	1	UJ	1.06
594-20-7	2,2-Dichloropropane	1.06	1	U	1.06
78-93-3	2-Butanone	1.06	1	U	1.06
95-49-8	2-Chlorotoluene	1.06	1	UJ	1.06
591-78-6	2-Hexanone	1.06	1	UJ	1.06
106-43-4	4-Chlorotoluene	1.06	1	UJ	1.06
108-10-1	4-Methyl-2-pentanone	1.06	1	UJ	1.06
67-64-1	Acetone	1.65	1	U	1.06
71-43-2	Benzene	1.06	1	UJ	1.06
108-86-1	Bromobenzene	1.06	1	UJ	1.06
74-97-5	Bromochloromethane	1.06	1	U	1.06
75-27-4	Bromodichloromethane	1.06	1	UJ	1.06
75-25-2	Bromoform	1.06	1	UJ	1.06
74-83-9	Bromomethane	2.12	1	U	2.12
75-15-0	Carbon Disulfide	1.06	1	U	1.06
56-23-5	Carbon Tetrachloride	1.06	1	UJ	1.06
108-90-7	Chlorobenzene	1.06	1	UJ	1.06
75-00-3	Chloroethane	1.06	1	UJ	1.06
67-66-3	Chloroform	1.06	1	U	1.06
74-87-3	Chloromethane	1.06	1	U	1.06
156-59-2	Cis-1,2-Dichloroethene	1.06	1	U	1.06
10061-01-5	Cis-1,3-Dichloropropene	1.06	1	UJ	1.06
124-48-1	Dibromochloromethane	1.06	1	UJ	1.06
74-95-3	Dibromomethane	1.06	1	UJ	1.06
75-71-8	Dichlorodifluoromethane	2.12	1	U	2.12
60-29-7	Ethyl Ether	1.06	1	U	1.06

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

Project: LCB Sampling | **Field ID: W-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.371 g
Final Vol: 5 mL

Lab ID #: 2304065-31
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.80%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.06	1	UJ	1.06
87-68-3	Hexachlorobutadiene	1.06	1	UJ	1.06
67-72-1	Hexachloroethane	1.06	1	UJ	1.06
98-82-8	Isopropylbenzene (Cumene)	1.06	1	UJ	1.06
179601-23-1	m,p-Xylene	2.12	1	UJ	2.12
74-88-4	Methyl Iodide	1.06	1	U	1.06
1634-04-4	Methyl t-butyl ether	1.06	1	U	1.06
75-09-2	Methylene Chloride	1.06	1	U	1.06
91-20-3	Naphthalene	1.06	1	UJ	1.06
104-51-8	n-Butylbenzene	1.06	1	UJ	1.06
103-65-1	n-Propylbenzene	1.06	1	UJ	1.06
95-47-6	o-Xylene	1.06	1	UJ	1.06
76-01-7	Pentachloroethane	1.06	1	UJ	1.06
99-87-6	p-Isopropyltoluene	1.06	1	UJ	1.06
135-98-8	Sec-Butylbenzene	1.06	1	UJ	1.06
100-42-5	Styrene	1.06	1	UJ	1.06
98-06-6	Tert-Butylbenzene	1.06	1	UJ	1.06
127-18-4	Tetrachloroethene	1.06	1	UJ	1.06
109-99-9	Tetrahydrofuran	1.06	1	U	1.06
108-88-3	Toluene	1.06	1	UJ	1.06
156-60-5	Trans-1,2-Dichloroethene	1.06	1	U	1.06
10061-02-6	Trans-1,3-Dichloropropene	1.06	1	UJ	1.06
110-57-6	Trans-1,4-Dichloro-2-butene	2.12	1	UJ	2.12
79-01-6	Trichloroethene	1.06	1	UJ	1.06
75-69-4	Trichlorofluoromethane	1.06	1	U	1.06
75-01-4	Vinyl Chloride	1.06	1	U	1.06

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	12.0	10.0	120	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*13.6*	*10.0*	*136*	*80-120*
540-36-3	1,4-Difluorobenzene	10.4	10.0	104	80-120
460-00-4	*p-Bromofluorobenzene*	*6.14*	*10.0*	*61*	*80-120*
2037-26-5	Toluene-D8	11.8	10.0	118	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: W-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.746 g
Final Vol: 5 mL

Lab ID #: 2304065-32
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.91%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.20	1	U	1.20
71-55-6	1,1,1-Trichloroethane	1.20	1	U	1.20
79-34-5	1,1,2,2-Tetrachloroethane	1.20	1	U	1.20
79-00-5	1,1,2-Trichloroethane	1.20	1	U	1.20
76-13-1	1,1,2-Trichlorotrifluoroethane	1.20	1	U	1.20
75-34-3	1,1-Dichloroethane	1.20	1	U	1.20
75-35-4	1,1-Dichloroethene	1.20	1	U	1.20
563-58-6	1,1-Dichloropropene	1.20	1	U	1.20
87-61-6	1,2,3-Trichlorobenzene	1.20	1	UJ	1.20
96-18-4	1,2,3-Trichloropropane	1.20	1	UJ	1.20
120-82-1	1,2,4-Trichlorobenzene	1.20	1	UJ	1.20
95-63-6	1,2,4-Trimethylbenzene	1.20	1	UJ	1.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.20	1	UJ	1.20
106-93-4	1,2-Dibromoethane	1.20	1	U	1.20
95-50-1	1,2-Dichlorobenzene	1.20	1	UJ	1.20
107-06-2	1,2-Dichloroethane	1.20	1	U	1.20
78-87-5	1,2-Dichloropropane	1.20	1	U	1.20
108-67-8	1,3,5-Trimethylbenzene	1.20	1	UJ	1.20
541-73-1	1,3-Dichlorobenzene	1.20	1	UJ	1.20
142-28-9	1,3-Dichloropropane	1.20	1	U	1.20
106-46-7	1,4-Dichlorobenzene	1.20	1	UJ	1.20
594-20-7	2,2-Dichloropropane	1.20	1	U	1.20
78-93-3	2-Butanone	1.20	1	U	1.20
95-49-8	2-Chlorotoluene	1.20	1	UJ	1.20
591-78-6	2-Hexanone	1.20	1	U	1.20
106-43-4	4-Chlorotoluene	1.20	1	UJ	1.20
108-10-1	4-Methyl-2-pentanone	1.20	1	U	1.20
67-64-1	Acetone	1.95	1	U	1.20
71-43-2	Benzene	1.20	1	U	1.20
108-86-1	Bromobenzene	1.20	1	UJ	1.20
74-97-5	Bromochloromethane	1.20	1	U	1.20
75-27-4	Bromodichloromethane	1.20	1	U	1.20
75-25-2	Bromoform	1.20	1	UJ	1.20
74-83-9	Bromomethane	2.40	1	U	2.40
75-15-0	Carbon Disulfide	1.20	1	U	1.20
56-23-5	Carbon Tetrachloride	1.20	1	U	1.20
108-90-7	Chlorobenzene	1.20	1	U	1.20
75-00-3	Chloroethane	1.20	1	UJ	1.20
67-66-3	Chloroform	1.20	1	U	1.20
74-87-3	Chloromethane	1.20	1	U	1.20
156-59-2	Cis-1,2-Dichloroethene	1.20	1	U	1.20
10061-01-5	Cis-1,3-Dichloropropene	1.20	1	U	1.20
124-48-1	Dibromochloromethane	1.20	1	U	1.20
74-95-3	Dibromomethane	1.20	1	U	1.20
75-71-8	Dichlorodifluoromethane	2.40	1	U	2.40
60-29-7	Ethyl Ether	1.20	1	U	1.20

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

Project: LCB Sampling — Field ID: W-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.746 g
Final Vol: 5 mL

Lab ID #: 2304065-32
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.91%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.20	1	U	1.20
87-68-3	Hexachlorobutadiene	1.20	1	UJ	1.20
67-72-1	Hexachloroethane	1.20	1	UJ	1.20
98-82-8	Isopropylbenzene (Cumene)	1.20	1	UJ	1.20
179601-23-1	m,p-Xylene	2.40	1	U	2.40
74-88-4	Methyl Iodide	1.20	1	U	1.20
1634-04-4	Methyl t-butyl ether	1.20	1	U	1.20
75-09-2	Methylene Chloride	1.20	1	U	1.20
91-20-3	Naphthalene	1.20	1	UJ	1.20
104-51-8	n-Butylbenzene	1.20	1	UJ	1.20
103-65-1	n-Propylbenzene	1.20	1	UJ	1.20
95-47-6	o-Xylene	1.20	1	U	1.20
76-01-7	Pentachloroethane	1.20	1	UJ	1.20
99-87-6	p-Isopropyltoluene	1.20	1	UJ	1.20
135-98-8	Sec-Butylbenzene	1.20	1	UJ	1.20
100-42-5	Styrene	1.20	1	U	1.20
98-06-6	Tert-Butylbenzene	1.20	1	UJ	1.20
127-18-4	Tetrachloroethene	1.20	1	U	1.20
109-99-9	Tetrahydrofuran	1.20	1	U	1.20
108-88-3	Toluene	1.20	1	U	1.20
156-60-5	Trans-1,2-Dichloroethene	1.20	1	U	1.20
10061-02-6	Trans-1,3-Dichloropropene	1.20	1	U	1.20
110-57-6	Trans-1,4-Dichloro-2-butene	2.40	1	U	2.40
79-01-6	Trichloroethene	1.20	1	U	1.20
75-69-4	Trichlorofluoromethane	1.20	1	U	1.20
75-01-4	Vinyl Chloride	1.20	1	U	1.20

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.8	10.0	118	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.6*	*10.0*	*126*	*80-120*
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	*p-Bromofluorobenzene*	*6.93*	*10.0*	*69*	*80-120*
2037-26-5	Toluene-D8	11.2	10.0	112	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: HE-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.257 g
Final Vol: 5 mL

Lab ID #: 2304065-33
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 85.35%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.11	1	UJ	1.11
71-55-6	1,1,1-Trichloroethane	1.11	1	UJ	1.11
79-34-5	1,1,2,2-Tetrachloroethane	1.11	1	UJ	1.11
79-00-5	1,1,2-Trichloroethane	1.11	1	UJ	1.11
76-13-1	1,1,2-Trichlorotrifluoroethane	1.11	1	UJ	1.11
75-34-3	1,1-Dichloroethane	1.11	1	UJ	1.11
75-35-4	1,1-Dichloroethene	1.11	1	UJ	1.11
563-58-6	1,1-Dichloropropene	1.11	1	UJ	1.11
87-61-6	1,2,3-Trichlorobenzene	1.11	1	UJ	1.11
96-18-4	1,2,3-Trichloropropane	1.11	1	UJ	1.11
120-82-1	1,2,4-Trichlorobenzene	1.11	1	UJ	1.11
95-63-6	1,2,4-Trimethylbenzene	1.11	1	UJ	1.11
96-12-8	1,2-Dibromo-3-Chloropropane	1.11	1	UJ	1.11
106-93-4	1,2-Dibromoethane	1.11	1	UJ	1.11
95-50-1	1,2-Dichlorobenzene	1.11	1	UJ	1.11
107-06-2	1,2-Dichloroethane	1.11	1	UJ	1.11
78-87-5	1,2-Dichloropropane	1.11	1	UJ	1.11
108-67-8	1,3,5-Trimethylbenzene	1.11	1	UJ	1.11
541-73-1	1,3-Dichlorobenzene	1.11	1	UJ	1.11
142-28-9	1,3-Dichloropropane	1.11	1	UJ	1.11
106-46-7	1,4-Dichlorobenzene	1.11	1	UJ	1.11
594-20-7	2,2-Dichloropropane	1.11	1	UJ	1.11
78-93-3	2-Butanone	1.11	1	UJ	1.11
95-49-8	2-Chlorotoluene	1.11	1	UJ	1.11
591-78-6	2-Hexanone	1.11	1	UJ	1.11
106-43-4	4-Chlorotoluene	1.11	1	UJ	1.11
108-10-1	4-Methyl-2-pentanone	1.11	1	UJ	1.11
67-64-1	Acetone	2.01	1	UJ	1.11
71-43-2	Benzene	1.11	1	UJ	1.11
108-86-1	Bromobenzene	1.11	1	UJ	1.11
74-97-5	Bromochloromethane	1.11	1	UJ	1.11
75-27-4	Bromodichloromethane	1.11	1	UJ	1.11
75-25-2	Bromoform	1.11	1	UJ	1.11
74-83-9	Bromomethane	2.23	1	UJ	2.23
75-15-0	Carbon Disulfide	1.11	1	UJ	1.11
56-23-5	Carbon Tetrachloride	1.11	1	UJ	1.11
108-90-7	Chlorobenzene	1.11	1	UJ	1.11
75-00-3	Chloroethane	1.11	1	UJ	1.11
67-66-3	Chloroform	1.11	1	UJ	1.11
74-87-3	Chloromethane	1.11	1	UJ	1.11
156-59-2	Cis-1,2-Dichloroethene	1.11	1	UJ	1.11
10061-01-5	Cis-1,3-Dichloropropene	1.11	1	UJ	1.11
124-48-1	Dibromochloromethane	1.11	1	UJ	1.11
74-95-3	Dibromomethane	1.11	1	UJ	1.11
75-71-8	Dichlorodifluoromethane	2.23	1	UJ	2.23
60-29-7	Ethyl Ether	1.11	1	UJ	1.11

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

Project: LCB Sampling — Field ID: HE-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.257 g
Final Vol: 5 mL

Lab ID #: 2304065-33
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 85.35%

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.11	1	UJ	1.11
87-68-3	Hexachlorobutadiene	1.11	1	UJ	1.11
67-72-1	Hexachloroethane	1.11	1	UJ	1.11
98-82-8	Isopropylbenzene (Cumene)	1.11	1	UJ	1.11
179601-23-1	m,p-Xylene	2.23	1	UJ	2.23
74-88-4	Methyl Iodide	1.11	1	UJ	1.11
1634-04-4	Methyl t-butyl ether	1.11	1	UJ	1.11
75-09-2	Methylene Chloride	1.11	1	UJ	1.11
91-20-3	Naphthalene	1.11	1	UJ	1.11
104-51-8	n-Butylbenzene	1.11	1	UJ	1.11
103-65-1	n-Propylbenzene	1.11	1	UJ	1.11
95-47-6	o-Xylene	1.11	1	UJ	1.11
76-01-7	Pentachloroethane	1.11	1	UJ	1.11
99-87-6	p-Isopropyltoluene	1.11	1	UJ	1.11
135-98-8	Sec-Butylbenzene	1.11	1	UJ	1.11
100-42-5	Styrene	1.11	1	UJ	1.11
98-06-6	Tert-Butylbenzene	1.11	1	UJ	1.11
127-18-4	Tetrachloroethene	1.11	1	UJ	1.11
109-99-9	Tetrahydrofuran	1.11	1	UJ	1.11
108-88-3	Toluene	1.11	1	UJ	1.11
156-60-5	Trans-1,2-Dichloroethene	1.11	1	UJ	1.11
10061-02-6	Trans-1,3-Dichloropropene	1.11	1	UJ	1.11
110-57-6	Trans-1,4-Dichloro-2-butene	2.23	1	UJ	2.23
79-01-6	Trichloroethene	1.11	1	UJ	1.11
75-69-4	Trichlorofluoromethane	1.11	1	UJ	1.11
75-01-4	Vinyl Chloride	1.11	1	UJ	1.11

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*13.1*	*10.0*	*131*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*14.2*	*10.0*	*142*	*80-120*
540-36-3	1,4-Difluorobenzene	10.4	10.0	104	80-120
460-00-4	*p-Bromofluorobenzene*	*6.48*	*10.0*	*65*	*80-120*
2037-26-5	Toluene-D8	10.5	10.0	105	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BLK1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BLK1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.00	U	1.00
71-55-6	1,1,1-Trichloroethane	1.00	U	1.00
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	1.00
79-00-5	1,1,2-Trichloroethane	1.00	U	1.00
76-13-1	1,1,2-Trichlorotrifluoroethane	1.00	U	1.00
75-34-3	1,1-Dichloroethane	1.00	U	1.00
75-35-4	1,1-Dichloroethene	1.00	U	1.00
563-58-6	1,1-Dichloropropene	1.00	U	1.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	1.00
96-18-4	1,2,3-Trichloropropane	1.00	U	1.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	1.00
95-63-6	1,2,4-Trimethylbenzene	1.00	U	1.00
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	1.00
106-93-4	1,2-Dibromoethane	1.00	U	1.00
95-50-1	1,2-Dichlorobenzene	1.00	U	1.00
107-06-2	1,2-Dichloroethane	1.00	U	1.00
78-87-5	1,2-Dichloropropane	1.00	U	1.00
108-67-8	1,3,5-Trimethylbenzene	1.00	U	1.00
541-73-1	1,3-Dichlorobenzene	1.00	U	1.00
142-28-9	1,3-Dichloropropane	1.00	U	1.00
106-46-7	1,4-Dichlorobenzene	1.00	U	1.00
594-20-7	2,2-Dichloropropane	1.00	U	1.00
78-93-3	2-Butanone	1.00	U	1.00
95-49-8	2-Chlorotoluene	1.00	U	1.00
591-78-6	2-Hexanone	1.00	U	1.00
106-43-4	4-Chlorotoluene	1.00	U	1.00
108-10-1	4-Methyl-2-pentanone	1.00	U	1.00
67-64-1	**Acetone**	**0.71**	**J**	**1.00**
71-43-2	Benzene	1.00	U	1.00
108-86-1	Bromobenzene	1.00	U	1.00
74-97-5	Bromochloromethane	1.00	U	1.00
75-27-4	Bromodichloromethane	1.00	U	1.00
75-25-2	Bromoform	1.00	U	1.00
74-83-9	Bromomethane	2.00	U	2.00
75-15-0	Carbon Disulfide	1.00	U	1.00
56-23-5	Carbon Tetrachloride	1.00	U	1.00
108-90-7	Chlorobenzene	1.00	U	1.00
75-00-3	Chloroethane	1.00	UJ	1.00
67-66-3	Chloroform	1.00	U	1.00
74-87-3	Chloromethane	1.00	U	1.00
156-59-2	Cis-1,2-Dichloroethene	1.00	U	1.00
10061-01-5	Cis-1,3-Dichloropropene	1.00	U	1.00
124-48-1	Dibromochloromethane	1.00	U	1.00
74-95-3	Dibromomethane	1.00	U	1.00
75-71-8	Dichlorodifluoromethane	2.00	U	2.00
60-29-7	Ethyl Ether	1.00	U	1.00

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

Project: LCB Sampling

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BLK1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BLK1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.00	U	1.00
87-68-3	Hexachlorobutadiene	1.00	U	1.00
67-72-1	Hexachloroethane	1.00	U	1.00
98-82-8	Isopropylbenzene (Cumene)	1.00	U	1.00
179601-23-1	m,p-Xylene	2.00	U	2.00
74-88-4	Methyl Iodide	1.00	U	1.00
1634-04-4	Methyl t-butyl ether	1.00	U	1.00
75-09-2	Methylene Chloride	1.00	U	1.00
91-20-3	Naphthalene	1.00	U	1.00
104-51-8	n-Butylbenzene	1.00	U	1.00
103-65-1	n-Propylbenzene	1.00	U	1.00
95-47-6	o-Xylene	1.00	U	1.00
76-01-7	Pentachloroethane	1.00	U	1.00
99-87-6	p-Isopropyltoluene	1.00	U	1.00
135-98-8	Sec-Butylbenzene	1.00	U	1.00
100-42-5	Styrene	1.00	U	1.00
98-06-6	Tert-Butylbenzene	1.00	U	1.00
127-18-4	Tetrachloroethene	1.00	U	1.00
109-99-9	Tetrahydrofuran	1.00	U	1.00
108-88-3	Toluene	1.00	U	1.00
156-60-5	Trans-1,2-Dichloroethene	1.00	U	1.00
10061-02-6	Trans-1,3-Dichloropropene	1.00	U	1.00
110-57-6	Trans-1,4-Dichloro-2-butene	2.00	U	2.00
79-01-6	Trichloroethene	1.00	U	1.00
75-69-4	Trichlorofluoromethane	1.00	U	1.00
75-01-4	Vinyl Chloride	1.00	U	1.00

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.5	10.0	105	80-120
17060-07-0	1,2-Dichloroethane-D4	9.84	10.0	98	80-120
540-36-3	1,4-Difluorobenzene	9.96	10.0	100	80-120
460-00-4	p-Bromofluorobenzene	9.41	10.0	94	80-120
2037-26-5	Toluene-D8	9.74	10.0	97	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

QC Type : LCS

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BS1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BS1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.6	10.0	1.00	106	75-125
1,1,1-Trichloroethane	10.5	10.0	1.00	105	75-125
1,1,2,2-Tetrachloroethane	10.3	10.0	1.00	103	75-125
1,1,2-Trichloroethane	10.4	10.0	1.00	104	75-125
1,1,2-Trichlorotrifluoroethane	10.9	10.0	1.00	109	75-125
1,1-Dichloroethane	10.1	10.0	1.00	101	75-125
1,1-Dichloroethene	11.7	10.0	1.00	117	75-125
1,1-Dichloropropene	10.2	10.0	1.00	102	75-125
1,2,3-Trichlorobenzene	9.9	10.0	1.00	99	75-125
1,2,3-Trichloropropane	9.5	10.0	1.00	95	75-125
1,2,4-Trichlorobenzene	10.2	10.0	1.00	102	75-125
1,2,4-Trimethylbenzene	10.3	10.0	1.00	103	75-125
1,2-Dibromo-3-Chloropropane	9.8	10.0	1.00	98	75-125
1,2-Dibromoethane	10.4	10.0	1.00	104	75-125
1,2-Dichlorobenzene	10.4	10.0	1.00	104	75-125
1,2-Dichloroethane	10.6	10.0	1.00	106	75-125
1,2-Dichloropropane	10.4	10.0	1.00	104	75-125
1,3,5-Trimethylbenzene	10.2	10.0	1.00	102	75-125
1,3-Dichlorobenzene	10.6	10.0	1.00	106	75-125
1,3-Dichloropropane	10.3	10.0	1.00	103	75-125
1,4-Dichlorobenzene	10.4	10.0	1.00	104	75-125
2,2-Dichloropropane	10.7	10.0	1.00	107	75-125
2-Butanone	9.3	10.0	1.00	93	60-140
2-Chlorotoluene	10.3	10.0	1.00	103	75-125
2-Hexanone	9.6	10.0	1.00	96	60-140
4-Chlorotoluene	10.6	10.0	1.00	106	60-140
4-Methyl-2-pentanone	9.7	10.0	1.00	97	60-140
Acetone	12.3	10.0	1.00	123	60-140
Benzene	10.3	10.0	1.00	103	75-125
Bromobenzene	10.7	10.0	1.00	107	75-125
Bromochloromethane	10.9	10.0	1.00	109	75-125
Bromodichloromethane	10.4	10.0	1.00	104	75-125
Bromoform	10.0	10.0	1.00	100	75-125
Bromomethane	11.7	10.0	2.00	117	60-140
Carbon Disulfide	10.4	10.0	1.00	104	75-125
Carbon Tetrachloride	10.5	10.0	1.00	105	75-125
Chlorobenzene	10.5	10.0	1.00	105	75-125
Chloroethane	4.9	10.0	1.00	49	75-125
Chloroform	10.6	10.0	1.00	106	75-125
Chloromethane	10.9	10.0	1.00	109	60-140
Cis-1,2-Dichloroethene	10.9	10.0	1.00	109	75-125
Cis-1,3-Dichloropropene	9.9	10.0	1.00	99	75-125
Dibromochloromethane	10.5	10.0	1.00	105	75-125
Dibromomethane	10.1	10.0	1.00	101	75-125
Dichlorodifluoromethane	11.3	10.0	2.00	113	60-140
Ethyl Ether	9.7	10.0	1.00	97	75-125

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

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BS1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BS1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Ethylbenzene	10.4	10.0	1.00	104	75-125
Hexachlorobutadiene	10.8	10.0	1.00	108	75-125
Hexachloroethane	10.4	10.0	1.00	104	75-125
Isopropylbenzene (Cumene)	10.7	10.0	1.00	107	75-125
m,p-Xylene	21.9	20.0	2.00	110	75-125
Methyl Iodide	9.7	10.0	1.00	97	75-125
Methyl t-butyl ether	10.0	10.0	1.00	100	75-125
Methylene Chloride	11.8	10.0	1.00	118	60-140
Naphthalene	10.0	10.0	1.00	100	75-125
n-Butylbenzene	10.6	10.0	1.00	106	75-125
n-Propylbenzene	10.4	10.0	1.00	104	75-125
o-Xylene	10.5	10.0	1.00	105	75-125
Pentachloroethane	10.4	10.0	1.00	104	75-125
p-Isopropyltoluene	10.5	10.0	1.00	105	75-125
Styrene	10.4	10.0	1.00	104	75-125
Tert-Butylbenzene	10.2	10.0	1.00	102	75-125
Tetrachloroethene	10.9	10.0	1.00	109	75-125
Tetrahydrofuran	10.3	10.0	1.00	103	75-125
Toluene	10.5	10.0	1.00	105	75-125
Trans-1,2-Dichloroethene	10.4	10.0	1.00	104	75-125
Trans-1,3-Dichloropropene	9.7	10.0	1.00	97	75-125
Trans-1,4-Dichloro-2-butene	9.8	10.0	2.00	98	75-125
Trichloroethene	10.5	10.0	1.00	105	75-125
Trichlorofluoromethane	11.8	10.0	1.00	118	75-125
Vinyl Chloride	10.5	10.0	1.00	105	60-140

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	9.87	10.0	99	80-120
17060-07-0	1,2-Dichloroethane-D4	10.4	10.0	104	80-120
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	p-Bromofluorobenzene	9.94	10.0	99	80-120
2037-26-5	Toluene-D8	9.82	10.0	98	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BSD1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BSD1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
1,1,1,2-Tetrachloroethane	10.4	10.0	104	2	75-125	30
1,1,1-Trichloroethane	10.1	10.0	101	4	75-125	30
1,1,2,2-Tetrachloroethane	10.0	10.0	100	3	75-125	30
1,1,2-Trichloroethane	10.1	10.0	101	3	75-125	30
1,1,2-Trichlorotrifluoroethane	9.9	10.0	99	9	75-125	30
1,1-Dichloroethane	10.1	10.0	101	0.3	75-125	30
1,1-Dichloroethene	10.8	10.0	108	8	75-125	30
1,1-Dichloropropene	10.4	10.0	104	2	75-125	30
1,2,3-Trichlorobenzene	10.3	10.0	103	4	75-125	30
1,2,3-Trichloropropane	8.9	10.0	89	7	75-125	30
1,2,4-Trichlorobenzene	10.5	10.0	105	3	75-125	30
1,2,4-Trimethylbenzene	10.1	10.0	101	1	75-125	30
1,2-Dibromo-3-Chloropropane	9.5	10.0	95	4	75-125	30
1,2-Dibromoethane	10.2	10.0	102	2	75-125	30
1,2-Dichlorobenzene	10.2	10.0	102	2	75-125	30
1,2-Dichloroethane	10.3	10.0	103	2	75-125	30
1,2-Dichloropropane	10.3	10.0	103	0.9	75-125	30
1,3,5-Trimethylbenzene	10.1	10.0	101	2	75-125	30
1,3-Dichlorobenzene	10.5	10.0	105	1	75-125	30
1,3-Dichloropropane	10.3	10.0	103	0.7	75-125	30
1,4-Dichlorobenzene	10.4	10.0	104	0.3	75-125	30
2,2-Dichloropropane	10.5	10.0	105	2	75-125	30
2-Butanone	10.8	10.0	108	15	60-140	40
2-Chlorotoluene	10.3	10.0	103	0.6	75-125	30
2-Hexanone	9.1	10.0	91	5	60-140	40
4-Chlorotoluene	10.4	10.0	104	2	60-140	40
4-Methyl-2-pentanone	9.0	10.0	90	8	60-140	40
Acetone	12.8	10.0	128	3	60-140	40
Benzene	10.1	10.0	101	2	75-125	30
Bromobenzene	10.6	10.0	106	2	75-125	30
Bromochloromethane	10.6	10.0	106	2	75-125	40
Bromodichloromethane	10.2	10.0	102	3	75-125	30
Bromoform	9.9	10.0	99	1	75-125	30
Bromomethane	9.6	10.0	96	19	60-140	40
Carbon Disulfide	9.8	10.0	98	6	75-125	30
Carbon Tetrachloride	10.2	10.0	102	2	75-125	30
Chlorobenzene	10.2	10.0	102	3	75-125	30
Chloroethane	4.8	10.0	48	3	75-125	30
Chloroform	10.3	10.0	103	2	75-125	30
Chloromethane	10.6	10.0	106	3	60-140	40
Cis-1,2-Dichloroethene	10.6	10.0	106	3	75-125	30
Cis-1,3-Dichloropropene	9.7	10.0	97	2	75-125	30
Dibromochloromethane	10.4	10.0	104	1	75-125	30
Dibromomethane	10.3	10.0	103	2	75-125	30
Dichlorodifluoromethane	10.7	10.0	107	5	60-140	40
Ethyl Ether	9.9	10.0	99	2	75-125	30

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

Project: LCB Sampling | **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D113-BSD1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D113-BSD1

Batch ID: B23D113
Prepared: 4/19/2023
Analyzed: 4/19/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Ethylbenzene	10.4	10.0	104	0.8	75-125	30
Hexachlorobutadiene	10.5	10.0	105	2	75-125	30
Hexachloroethane	10.1	10.0	101	3	75-125	30
Isopropylbenzene (Cumene)	10.5	10.0	105	2	75-125	30
m,p-Xylene	21.3	20.0	107	3	75-125	40
Methyl Iodide	10.1	10.0	101	4	75-125	30
Methyl t-butyl ether	9.8	10.0	98	2	75-125	30
Methylene Chloride	10.8	10.0	108	9	60-140	40
Naphthalene	10.3	10.0	103	3	75-125	30
n-Butylbenzene	10.6	10.0	106	0.08	75-125	30
n-Propylbenzene	10.1	10.0	101	3	75-125	30
o-Xylene	10.3	10.0	103	1	75-125	30
Pentachloroethane	10.3	10.0	103	2	75-125	30
p-Isopropyltoluene	10.4	10.0	104	0.1	75-125	30
Styrene	10.2	10.0	102	2	75-125	30
Tert-Butylbenzene	10.1	10.0	101	2	75-125	30
Tetrachloroethene	10.6	10.0	106	3	75-125	30
Tetrahydrofuran	10.7	10.0	107	4	75-125	30
Toluene	10.3	10.0	103	2	75-125	30
Trans-1,2-Dichloroethene	9.6	10.0	96	7	75-125	30
Trans-1,3-Dichloropropene	9.6	10.0	96	0.7	75-125	30
Trans-1,4-Dichloro-2-butene	9.9	10.0	99	1	75-125	30
Trichloroethene	10.5	10.0	105	0.5	75-125	30
Trichlorofluoromethane	10.9	10.0	109	9	75-125	30
Vinyl Chloride	10.0	10.0	100	5	60-140	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	9.90	10.0	99	80-120
17060-07-0	1,2-Dichloroethane-D4	10.3	10.0	103	80-120
540-36-3	1,4-Difluorobenzene	10.2	10.0	102	80-120
460-00-4	p-Bromofluorobenzene	9.97	10.0	100	80-120
2037-26-5	Toluene-D8	9.99	10.0	100	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.767 g
Final Vol: 5 mL

Lab ID #: 2304065-34
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.18%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.01	1	UJ	1.01
71-55-6	1,1,1-Trichloroethane	1.01	1	UJ	1.01
79-34-5	1,1,2,2-Tetrachloroethane	1.01	1	UJ	1.01
79-00-5	1,1,2-Trichloroethane	1.01	1	UJ	1.01
76-13-1	1,1,2-Trichlorotrifluoroethane	1.01	1	UJ	1.01
75-34-3	1,1-Dichloroethane	1.01	1	UJ	1.01
75-35-4	1,1-Dichloroethene	1.01	1	UJ	1.01
563-58-6	1,1-Dichloropropene	1.01	1	UJ	1.01
87-61-6	1,2,3-Trichlorobenzene		1	REJ	
96-18-4	1,2,3-Trichloropropane		1	REJ	
120-82-1	1,2,4-Trichlorobenzene		1	REJ	
95-63-6	1,2,4-Trimethylbenzene		1	REJ	
96-12-8	1,2-Dibromo-3-Chloropropane		1	REJ	
106-93-4	1,2-Dibromoethane	1.01	1	UJ	1.01
95-50-1	1,2-Dichlorobenzene		1	REJ	
107-06-2	1,2-Dichloroethane	1.01	1	UJ	1.01
78-87-5	1,2-Dichloropropane	1.01	1	UJ	1.01
108-67-8	1,3,5-Trimethylbenzene		1	REJ	
541-73-1	1,3-Dichlorobenzene		1	REJ	
142-28-9	1,3-Dichloropropane	1.01	1	UJ	1.01
106-46-7	1,4-Dichlorobenzene		1	REJ	
594-20-7	2,2-Dichloropropane	1.01	1	UJ	1.01
78-93-3	2-Butanone	1.01	1	UJ	1.01
95-49-8	2-Chlorotoluene		1	REJ	
591-78-6	2-Hexanone	1.01	1	UJ	1.01
106-43-4	4-Chlorotoluene		1	REJ	
108-10-1	4-Methyl-2-pentanone	1.01	1	UJ	1.01
67-64-1	Acetone	1.01	1	UJ	1.01
71-43-2	Benzene	1.01	1	UJ	1.01
108-86-1	Bromobenzene		1	REJ	
74-97-5	Bromochloromethane	1.01	1	UJ	1.01
75-27-4	Bromodichloromethane	1.01	1	UJ	1.01
75-25-2	Bromoform		1	REJ	
74-83-9	Bromomethane	2.01	1	UJ	2.01
75-15-0	Carbon Disulfide	1.01	1	UJ	1.01
56-23-5	Carbon Tetrachloride	1.01	1	UJ	1.01
108-90-7	Chlorobenzene	1.01	1	UJ	1.01
75-00-3	Chloroethane	1.01	1	UJ	1.01
67-66-3	Chloroform	1.01	1	UJ	1.01
74-87-3	Chloromethane	1.01	1	UJ	1.01
156-59-2	Cis-1,2-Dichloroethene	1.01	1	UJ	1.01
10061-01-5	Cis-1,3-Dichloropropene	1.01	1	UJ	1.01
124-48-1	Dibromochloromethane	1.01	1	UJ	1.01
74-95-3	Dibromomethane	1.01	1	UJ	1.01
75-71-8	Dichlorodifluoromethane	2.01	1	UJ	2.01
60-29-7	Ethyl Ether	1.01	1	UJ	1.01

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

Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.767 g
Final Vol: 5 mL

Lab ID #: 2304065-34
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.18%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.01	1	UJ	1.01
87-68-3	Hexachlorobutadiene		1	REJ	
67-72-1	Hexachloroethane		1	REJ	
98-82-8	Isopropylbenzene (Cumene)		1	REJ	
179601-23-1	m,p-Xylene	2.01	1	UJ	2.01
74-88-4	Methyl Iodide	1.01	1	UJ	1.01
1634-04-4	Methyl t-butyl ether	1.01	1	UJ	1.01
75-09-2	Methylene Chloride	1.01	1	UJ	1.01
91-20-3	Naphthalene		1	REJ	
104-51-8	n-Butylbenzene		1	REJ	
103-65-1	n-Propylbenzene		1	REJ	
95-47-6	o-Xylene	1.01	1	UJ	1.01
76-01-7	Pentachloroethane		1	REJ	
99-87-6	p-Isopropyltoluene		1	REJ	
135-98-8	Sec-Butylbenzene		1	REJ	
100-42-5	Styrene	1.01	1	UJ	1.01
98-06-6	Tert-Butylbenzene		1	REJ	
127-18-4	Tetrachloroethene	1.01	1	UJ	1.01
109-99-9	Tetrahydrofuran	1.01	1	UJ	1.01
108-88-3	Toluene	1.01	1	UJ	1.01
156-60-5	Trans-1,2-Dichloroethene	1.01	1	UJ	1.01
10061-02-6	Trans-1,3-Dichloropropene	1.01	1	UJ	1.01
110-57-6	Trans-1,4-Dichloro-2-butene	2.01	1	UJ	2.01
79-01-6	Trichloroethene	1.01	1	UJ	1.01
75-69-4	Trichlorofluoromethane	1.01	1	UJ	1.01
75-01-4	Vinyl Chloride	1.01	1	UJ	1.01

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*12.6*	*10.0*	*126*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*15.7*	*10.0*	*157*	*80-120*
540-36-3	1,4-Difluorobenzene	10.1	10.0	101	80-120
460-00-4	*p-Bromofluorobenzene*	*7.18*	*10.0*	*72*	*80-120*
2037-26-5	Toluene-D8	9.38	10.0	94	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: HE-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.045 g
Final Vol: 5 mL

Lab ID #: 2304065-35
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 85.41%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.16	1	U	1.16
71-55-6	1,1,1-Trichloroethane	1.16	1	U	1.16
79-34-5	1,1,2,2-Tetrachloroethane	1.16	1	U	1.16
79-00-5	1,1,2-Trichloroethane	1.16	1	U	1.16
76-13-1	1,1,2-Trichlorotrifluoroethane	1.16	1	U	1.16
75-34-3	1,1-Dichloroethane	1.16	1	U	1.16
75-35-4	1,1-Dichloroethene	1.16	1	U	1.16
563-58-6	1,1-Dichloropropene	1.16	1	U	1.16
87-61-6	1,2,3-Trichlorobenzene	1.16	1	UJ	1.16
96-18-4	1,2,3-Trichloropropane	1.16	1	UJ	1.16
120-82-1	1,2,4-Trichlorobenzene	1.16	1	UJ	1.16
95-63-6	1,2,4-Trimethylbenzene	1.16	1	UJ	1.16
96-12-8	1,2-Dibromo-3-Chloropropane	1.16	1	UJ	1.16
106-93-4	1,2-Dibromoethane	1.16	1	U	1.16
95-50-1	1,2-Dichlorobenzene	1.16	1	UJ	1.16
107-06-2	1,2-Dichloroethane	1.16	1	U	1.16
78-87-5	1,2-Dichloropropane	1.16	1	U	1.16
108-67-8	1,3,5-Trimethylbenzene	1.16	1	UJ	1.16
541-73-1	1,3-Dichlorobenzene	1.16	1	UJ	1.16
142-28-9	1,3-Dichloropropane	1.16	1	U	1.16
106-46-7	1,4-Dichlorobenzene	1.16	1	UJ	1.16
594-20-7	2,2-Dichloropropane	1.16	1	U	1.16
78-93-3	2-Butanone	1.16	1	UJ	1.16
95-49-8	2-Chlorotoluene	1.16	1	UJ	1.16
591-78-6	2-Hexanone	1.16	1	UJ	1.16
106-43-4	4-Chlorotoluene	1.16	1	UJ	1.16
108-10-1	4-Methyl-2-pentanone	1.16	1	UJ	1.16
67-64-1	Acetone	2.24	1	U	1.16
71-43-2	Benzene	1.16	1	U	1.16
108-86-1	Bromobenzene	1.16	1	UJ	1.16
74-97-5	Bromochloromethane	1.16	1	U	1.16
75-27-4	Bromodichloromethane	1.16	1	U	1.16
75-25-2	Bromoform	1.16	1	UJ	1.16
74-83-9	Bromomethane	2.32	1	U	2.32
75-15-0	Carbon Disulfide	1.16	1	U	1.16
56-23-5	Carbon Tetrachloride	1.16	1	U	1.16
108-90-7	Chlorobenzene	1.16	1	U	1.16
75-00-3	Chloroethane	1.16	1	UJ	1.16
67-66-3	Chloroform	1.16	1	U	1.16
74-87-3	Chloromethane	1.16	1	U	1.16
156-59-2	Cis-1,2-Dichloroethene	1.16	1	U	1.16
10061-01-5	Cis-1,3-Dichloropropene	1.16	1	U	1.16
124-48-1	Dibromochloromethane	1.16	1	U	1.16
74-95-3	Dibromomethane	1.16	1	U	1.16
75-71-8	Dichlorodifluoromethane	2.32	1	U	2.32
60-29-7	Ethyl Ether	1.16	1	U	1.16

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

Project: LCB Sampling | **Field ID: HE-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.045 g
Final Vol: 5 mL

Lab ID #: 2304065-35
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 85.41%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.16	1	U	1.16
87-68-3	Hexachlorobutadiene	1.16	1	UJ	1.16
67-72-1	Hexachloroethane	1.16	1	UJ	1.16
98-82-8	Isopropylbenzene (Cumene)	1.16	1	UJ	1.16
179601-23-1	m,p-Xylene	2.32	1	U	2.32
74-88-4	Methyl Iodide	1.16	1	UJ	1.16
1634-04-4	Methyl t-butyl ether	1.16	1	U	1.16
75-09-2	**Methylene Chloride**	**1.05**	1	**J**	**1.16**
91-20-3	Naphthalene	1.16	1	UJ	1.16
104-51-8	n-Butylbenzene	1.16	1	UJ	1.16
103-65-1	n-Propylbenzene	1.16	1	UJ	1.16
95-47-6	o-Xylene	1.16	1	U	1.16
76-01-7	Pentachloroethane	1.16	1	UJ	1.16
99-87-6	p-Isopropyltoluene	1.16	1	UJ	1.16
135-98-8	Sec-Butylbenzene	1.16	1	UJ	1.16
100-42-5	Styrene	1.16	1	U	1.16
98-06-6	Tert-Butylbenzene	1.16	1	UJ	1.16
127-18-4	Tetrachloroethene	1.16	1	U	1.16
109-99-9	Tetrahydrofuran	1.16	1	U	1.16
108-88-3	Toluene	1.16	1	U	1.16
156-60-5	Trans-1,2-Dichloroethene	1.16	1	U	1.16
10061-02-6	Trans-1,3-Dichloropropene	1.16	1	U	1.16
110-57-6	Trans-1,4-Dichloro-2-butene	2.32	1	U	2.32
79-01-6	Trichloroethene	1.16	1	U	1.16
75-69-4	Trichlorofluoromethane	1.16	1	U	1.16
75-01-4	Vinyl Chloride	1.16	1	U	1.16

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*12.6*	*10.0*	*126*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*13.4*	*10.0*	*134*	*80-120*
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	*p-Bromofluorobenzene*	*6.64*	*10.0*	*66*	*80-120*
2037-26-5	Toluene-D8	10.8	10.0	108	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: T-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.607 g
Final Vol: 5 mL

Lab ID #: 2304065-36
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.22%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.39	1	UJ	1.39
71-55-6	1,1,1-Trichloroethane	1.39	1	UJ	1.39
79-34-5	1,1,2,2-Tetrachloroethane	1.39	1	UJ	1.39
79-00-5	1,1,2-Trichloroethane	1.39	1	UJ	1.39
76-13-1	1,1,2-Trichlorotrifluoroethane	1.39	1	U	1.39
75-34-3	1,1-Dichloroethane	1.39	1	U	1.39
75-35-4	1,1-Dichloroethene	1.39	1	U	1.39
563-58-6	1,1-Dichloropropene	1.39	1	UJ	1.39
87-61-6	1,2,3-Trichlorobenzene	1.39	1	UJ	1.39
96-18-4	1,2,3-Trichloropropane	1.39	1	UJ	1.39
120-82-1	1,2,4-Trichlorobenzene	1.39	1	UJ	1.39
95-63-6	1,2,4-Trimethylbenzene	1.39	1	UJ	1.39
96-12-8	1,2-Dibromo-3-Chloropropane	1.39	1	UJ	1.39
106-93-4	1,2-Dibromoethane	1.39	1	UJ	1.39
95-50-1	1,2-Dichlorobenzene	1.39	1	UJ	1.39
107-06-2	1,2-Dichloroethane	1.39	1	U	1.39
78-87-5	1,2-Dichloropropane	1.39	1	UJ	1.39
108-67-8	1,3,5-Trimethylbenzene	1.39	1	UJ	1.39
541-73-1	1,3-Dichlorobenzene	1.39	1	UJ	1.39
142-28-9	1,3-Dichloropropane	1.39	1	UJ	1.39
106-46-7	1,4-Dichlorobenzene	1.39	1	UJ	1.39
594-20-7	2,2-Dichloropropane	1.39	1	U	1.39
78-93-3	2-Butanone	1.39	1	UJ	1.39
95-49-8	2-Chlorotoluene	1.39	1	UJ	1.39
591-78-6	2-Hexanone	1.39	1	UJ	1.39
106-43-4	4-Chlorotoluene	1.39	1	UJ	1.39
108-10-1	4-Methyl-2-pentanone	1.39	1	UJ	1.39
67-64-1	Acetone	2.55	1	U	1.39
71-43-2	Benzene	1.39	1	UJ	1.39
108-86-1	Bromobenzene	1.39	1	UJ	1.39
74-97-5	Bromochloromethane	1.39	1	U	1.39
75-27-4	Bromodichloromethane	1.39	1	UJ	1.39
75-25-2	Bromoform	1.39	1	UJ	1.39
74-83-9	Bromomethane	2.77	1	U	2.77
75-15-0	Carbon Disulfide	1.39	1	U	1.39
56-23-5	Carbon Tetrachloride	1.39	1	UJ	1.39
108-90-7	Chlorobenzene	1.39	1	UJ	1.39
75-00-3	Chloroethane	1.39	1	UJ	1.39
67-66-3	Chloroform	1.39	1	U	1.39
74-87-3	Chloromethane	1.39	1	U	1.39
156-59-2	Cis-1,2-Dichloroethene	1.39	1	U	1.39
10061-01-5	Cis-1,3-Dichloropropene	1.39	1	UJ	1.39
124-48-1	Dibromochloromethane	1.39	1	UJ	1.39
74-95-3	Dibromomethane	1.39	1	UJ	1.39
75-71-8	Dichlorodifluoromethane	2.77	1	U	2.77
60-29-7	Ethyl Ether	1.39	1	U	1.39

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

Project: LCB Sampling

Field ID: T-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.607 g
Final Vol: 5 mL

Lab ID #: 2304065-36
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.22%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.39	1	UJ	1.39
87-68-3	Hexachlorobutadiene	1.39	1	UJ	1.39
67-72-1	Hexachloroethane	1.39	1	UJ	1.39
98-82-8	Isopropylbenzene (Cumene)	1.39	1	UJ	1.39
179601-23-1	m,p-Xylene	2.77	1	UJ	2.77
74-88-4	Methyl Iodide	1.39	1	UJ	1.39
1634-04-4	Methyl t-butyl ether	1.39	1	U	1.39
75-09-2	**Methylene Chloride**	**0.79**	1	**J**	**1.39**
91-20-3	Naphthalene	1.39	1	UJ	1.39
104-51-8	n-Butylbenzene	1.39	1	UJ	1.39
103-65-1	n-Propylbenzene	1.39	1	UJ	1.39
95-47-6	o-Xylene	1.39	1	UJ	1.39
76-01-7	Pentachloroethane	1.39	1	UJ	1.39
99-87-6	p-Isopropyltoluene	1.39	1	UJ	1.39
135-98-8	Sec-Butylbenzene	1.39	1	UJ	1.39
100-42-5	Styrene	1.39	1	UJ	1.39
98-06-6	Tert-Butylbenzene	1.39	1	UJ	1.39
127-18-4	Tetrachloroethene	1.39	1	UJ	1.39
109-99-9	Tetrahydrofuran	1.39	1	U	1.39
108-88-3	Toluene	1.39	1	UJ	1.39
156-60-5	Trans-1,2-Dichloroethene	1.39	1	U	1.39
10061-02-6	Trans-1,3-Dichloropropene	1.39	1	UJ	1.39
110-57-6	Trans-1,4-Dichloro-2-butene	2.77	1	UJ	2.77
79-01-6	Trichloroethene	1.39	1	UJ	1.39
75-69-4	Trichlorofluoromethane	1.39	1	U	1.39
75-01-4	Vinyl Chloride	1.39	1	U	1.39

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*12.4*	*10.0*	*124*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*13.7*	*10.0*	*137*	*80-120*
540-36-3	1,4-Difluorobenzene	10.4	10.0	104	80-120
460-00-4	*p-Bromofluorobenzene*	*6.92*	*10.0*	*69*	*80-120*
2037-26-5	Toluene-D8	10.5	10.0	105	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: T-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.59 g
Final Vol: 5 mL

Lab ID #: 2304065-37
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 77.06%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.41	1	U	1.41
71-55-6	1,1,1-Trichloroethane	1.41	1	U	1.41
79-34-5	1,1,2,2-Tetrachloroethane	1.41	1	U	1.41
79-00-5	1,1,2-Trichloroethane	1.41	1	U	1.41
76-13-1	1,1,2-Trichlorotrifluoroethane	1.41	1	U	1.41
75-34-3	1,1-Dichloroethane	1.41	1	U	1.41
75-35-4	1,1-Dichloroethene	1.41	1	U	1.41
563-58-6	1,1-Dichloropropene	1.41	1	U	1.41
87-61-6	1,2,3-Trichlorobenzene	1.41	1	UJ	1.41
96-18-4	1,2,3-Trichloropropane	1.41	1	UJ	1.41
120-82-1	1,2,4-Trichlorobenzene	1.41	1	UJ	1.41
95-63-6	1,2,4-Trimethylbenzene	1.41	1	UJ	1.41
96-12-8	1,2-Dibromo-3-Chloropropane	1.41	1	UJ	1.41
106-93-4	1,2-Dibromoethane	1.41	1	U	1.41
95-50-1	1,2-Dichlorobenzene	1.41	1	UJ	1.41
107-06-2	1,2-Dichloroethane	1.41	1	U	1.41
78-87-5	1,2-Dichloropropane	1.41	1	U	1.41
108-67-8	1,3,5-Trimethylbenzene	1.41	1	UJ	1.41
541-73-1	1,3-Dichlorobenzene	1.41	1	UJ	1.41
142-28-9	1,3-Dichloropropane	1.41	1	U	1.41
106-46-7	1,4-Dichlorobenzene	1.41	1	UJ	1.41
594-20-7	2,2-Dichloropropane	1.41	1	U	1.41
78-93-3	2-Butanone	1.41	1	UJ	1.41
95-49-8	2-Chlorotoluene	1.41	1	UJ	1.41
591-78-6	2-Hexanone	1.41	1	UJ	1.41
106-43-4	4-Chlorotoluene	1.41	1	UJ	1.41
108-10-1	4-Methyl-2-pentanone	1.41	1	UJ	1.41
67-64-1	Acetone	1.41	1	U	1.41
71-43-2	Benzene	1.41	1	U	1.41
108-86-1	Bromobenzene	1.41	1	UJ	1.41
74-97-5	Bromochloromethane	1.41	1	U	1.41
75-27-4	Bromodichloromethane	1.41	1	U	1.41
75-25-2	Bromoform	1.41	1	UJ	1.41
74-83-9	Bromomethane	2.83	1	U	2.83
75-15-0	Carbon Disulfide	1.41	1	U	1.41
56-23-5	Carbon Tetrachloride	1.41	1	U	1.41
108-90-7	Chlorobenzene	1.41	1	U	1.41
75-00-3	Chloroethane	1.41	1	UJ	1.41
67-66-3	Chloroform	1.41	1	U	1.41
74-87-3	Chloromethane	1.41	1	U	1.41
156-59-2	Cis-1,2-Dichloroethene	1.41	1	U	1.41
10061-01-5	Cis-1,3-Dichloropropene	1.41	1	U	1.41
124-48-1	Dibromochloromethane	1.41	1	U	1.41
74-95-3	Dibromomethane	1.41	1	U	1.41
75-71-8	Dichlorodifluoromethane	2.83	1	U	2.83
60-29-7	Ethyl Ether	1.41	1	U	1.41

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

Project: LCB Sampling

Field ID: T-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 4.59 g
Final Vol: 5 mL

Lab ID #: 2304065-37
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 77.06%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.41	1	U	1.41
87-68-3	Hexachlorobutadiene	1.41	1	UJ	1.41
67-72-1	Hexachloroethane	1.41	1	UJ	1.41
98-82-8	Isopropylbenzene (Cumene)	1.41	1	UJ	1.41
179601-23-1	m,p-Xylene	2.83	1	U	2.83
74-88-4	Methyl Iodide	1.41	1	UJ	1.41
1634-04-4	Methyl t-butyl ether	1.41	1	U	1.41
75-09-2	**Methylene Chloride**	**1.14**	1	**J**	**1.41**
91-20-3	Naphthalene	1.41	1	UJ	1.41
104-51-8	n-Butylbenzene	1.41	1	UJ	1.41
103-65-1	n-Propylbenzene	1.41	1	UJ	1.41
95-47-6	o-Xylene	1.41	1	U	1.41
76-01-7	Pentachloroethane	1.41	1	UJ	1.41
99-87-6	p-Isopropyltoluene	1.41	1	UJ	1.41
135-98-8	Sec-Butylbenzene	1.41	1	UJ	1.41
100-42-5	Styrene	1.41	1	U	1.41
98-06-6	Tert-Butylbenzene	1.41	1	UJ	1.41
127-18-4	Tetrachloroethene	1.41	1	U	1.41
109-99-9	Tetrahydrofuran	1.41	1	U	1.41
108-88-3	Toluene	1.41	1	U	1.41
156-60-5	Trans-1,2-Dichloroethene	1.41	1	U	1.41
10061-02-6	Trans-1,3-Dichloropropene	1.41	1	U	1.41
110-57-6	Trans-1,4-Dichloro-2-butene	2.83	1	U	2.83
79-01-6	Trichloroethene	1.41	1	U	1.41
75-69-4	Trichlorofluoromethane	1.41	1	U	1.41
75-01-4	Vinyl Chloride	1.41	1	U	1.41

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.3	10.0	113	80-120
17060-07-0	1,2-Dichloroethane-D4	11.9	10.0	119	80-120
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	*p-Bromofluorobenzene*	*6.86*	*10.0*	*69*	*80-120*
2037-26-5	Toluene-D8	11.0	10.0	110	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: OG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.586 g
Final Vol: 5 mL

Lab ID #: 2304065-38
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.19%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.01	1	U	1.01
71-55-6	1,1,1-Trichloroethane	1.01	1	U	1.01
79-34-5	1,1,2,2-Tetrachloroethane	1.01	1	U	1.01
79-00-5	1,1,2-Trichloroethane	1.01	1	U	1.01
76-13-1	1,1,2-Trichlorotrifluoroethane	1.01	1	U	1.01
75-34-3	1,1-Dichloroethane	1.01	1	U	1.01
75-35-4	1,1-Dichloroethene	1.01	1	U	1.01
563-58-6	1,1-Dichloropropene	1.01	1	U	1.01
87-61-6	1,2,3-Trichlorobenzene	1.01	1	UJ	1.01
96-18-4	1,2,3-Trichloropropane	1.01	1	UJ	1.01
120-82-1	1,2,4-Trichlorobenzene	1.01	1	UJ	1.01
95-63-6	1,2,4-Trimethylbenzene	1.01	1	UJ	1.01
96-12-8	1,2-Dibromo-3-Chloropropane	1.01	1	UJ	1.01
106-93-4	1,2-Dibromoethane	1.01	1	U	1.01
95-50-1	1,2-Dichlorobenzene	1.01	1	UJ	1.01
107-06-2	1,2-Dichloroethane	1.01	1	U	1.01
78-87-5	1,2-Dichloropropane	1.01	1	U	1.01
108-67-8	1,3,5-Trimethylbenzene	1.01	1	UJ	1.01
541-73-1	1,3-Dichlorobenzene	1.01	1	UJ	1.01
142-28-9	1,3-Dichloropropane	1.01	1	U	1.01
106-46-7	1,4-Dichlorobenzene	1.01	1	UJ	1.01
594-20-7	2,2-Dichloropropane	1.01	1	U	1.01
78-93-3	2-Butanone	1.01	1	UJ	1.01
95-49-8	2-Chlorotoluene	1.01	1	UJ	1.01
591-78-6	2-Hexanone	1.01	1	UJ	1.01
106-43-4	4-Chlorotoluene	1.01	1	UJ	1.01
108-10-1	4-Methyl-2-pentanone	1.01	1	UJ	1.01
67-64-1	Acetone	2.44	1	U	1.01
71-43-2	Benzene	1.01	1	U	1.01
108-86-1	Bromobenzene	1.01	1	UJ	1.01
74-97-5	Bromochloromethane	1.01	1	U	1.01
75-27-4	Bromodichloromethane	1.01	1	U	1.01
75-25-2	Bromoform	1.01	1	UJ	1.01
74-83-9	Bromomethane	2.03	1	U	2.03
75-15-0	Carbon Disulfide	1.01	1	U	1.01
56-23-5	Carbon Tetrachloride	1.01	1	U	1.01
108-90-7	Chlorobenzene	1.01	1	U	1.01
75-00-3	Chloroethane	1.01	1	UJ	1.01
67-66-3	Chloroform	1.01	1	U	1.01
74-87-3	Chloromethane	1.01	1	U	1.01
156-59-2	Cis-1,2-Dichloroethene	1.01	1	U	1.01
10061-01-5	Cis-1,3-Dichloropropene	1.01	1	U	1.01
124-48-1	Dibromochloromethane	1.01	1	U	1.01
74-95-3	Dibromomethane	1.01	1	U	1.01
75-71-8	Dichlorodifluoromethane	2.03	1	U	2.03
60-29-7	Ethyl Ether	1.01	1	U	1.01

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

Project: LCB Sampling — Field ID: OG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.586 g
Final Vol: 5 mL

Lab ID #: 2304065-38
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.19%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.01	1	U	1.01
87-68-3	Hexachlorobutadiene	1.01	1	UJ	1.01
67-72-1	Hexachloroethane	1.01	1	UJ	1.01
98-82-8	Isopropylbenzene (Cumene)	1.01	1	UJ	1.01
179601-23-1	m,p-Xylene	2.03	1	U	2.03
74-88-4	Methyl Iodide	1.01	1	UJ	1.01
1634-04-4	Methyl t-butyl ether	1.01	1	U	1.01
75-09-2	**Methylene Chloride**	**0.93**	1	**J**	**1.01**
91-20-3	Naphthalene	1.01	1	UJ	1.01
104-51-8	n-Butylbenzene	1.01	1	UJ	1.01
103-65-1	n-Propylbenzene	1.01	1	UJ	1.01
95-47-6	o-Xylene	1.01	1	U	1.01
76-01-7	Pentachloroethane	1.01	1	UJ	1.01
99-87-6	p-Isopropyltoluene	1.01	1	UJ	1.01
135-98-8	Sec-Butylbenzene	1.01	1	UJ	1.01
100-42-5	Styrene	1.01	1	U	1.01
98-06-6	Tert-Butylbenzene	1.01	1	UJ	1.01
127-18-4	Tetrachloroethene	1.01	1	U	1.01
109-99-9	Tetrahydrofuran	1.01	1	U	1.01
108-88-3	Toluene	1.01	1	U	1.01
156-60-5	Trans-1,2-Dichloroethene	1.01	1	U	1.01
10061-02-6	Trans-1,3-Dichloropropene	1.01	1	U	1.01
110-57-6	Trans-1,4-Dichloro-2-butene	2.03	1	U	2.03
79-01-6	Trichloroethene	1.01	1	U	1.01
75-69-4	Trichlorofluoromethane	1.01	1	U	1.01
75-01-4	Vinyl Chloride	1.01	1	U	1.01

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.6	10.0	116	80-120
17060-07-0	*1,2-Dichloroethane-D4*	*12.6*	*10.0*	*126*	*80-120*
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	*p-Bromofluorobenzene*	*6.68*	*10.0*	*67*	*80-120*
2037-26-5	Toluene-D8	11.1	10.0	111	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: OG-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.433 g
Final Vol: 5 mL

Lab ID #: 2304065-39
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.76%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane		1	REJ	
71-55-6	1,1,1-Trichloroethane		1	REJ	
79-34-5	1,1,2,2-Tetrachloroethane		1	REJ	
79-00-5	1,1,2-Trichloroethane		1	REJ	
76-13-1	1,1,2-Trichlorotrifluoroethane		1	REJ	
75-34-3	1,1-Dichloroethane		1	REJ	
75-35-4	1,1-Dichloroethene		1	REJ	
563-58-6	1,1-Dichloropropene		1	REJ	
87-61-6	1,2,3-Trichlorobenzene		1	REJ	
96-18-4	1,2,3-Trichloropropane		1	REJ	
120-82-1	1,2,4-Trichlorobenzene		1	REJ	
95-63-6	1,2,4-Trimethylbenzene		1	REJ	
96-12-8	1,2-Dibromo-3-Chloropropane		1	REJ	
106-93-4	1,2-Dibromoethane		1	REJ	
95-50-1	1,2-Dichlorobenzene		1	REJ	
107-06-2	1,2-Dichloroethane		1	REJ	
78-87-5	1,2-Dichloropropane		1	REJ	
108-67-8	1,3,5-Trimethylbenzene		1	REJ	
541-73-1	1,3-Dichlorobenzene		1	REJ	
142-28-9	1,3-Dichloropropane		1	REJ	
106-46-7	1,4-Dichlorobenzene		1	REJ	
594-20-7	2,2-Dichloropropane		1	REJ	
78-93-3	2-Butanone		1	REJ	
95-49-8	2-Chlorotoluene		1	REJ	
591-78-6	2-Hexanone		1	REJ	
106-43-4	4-Chlorotoluene		1	REJ	
108-10-1	4-Methyl-2-pentanone		1	REJ	
67-64-1	Acetone		1	REJ	
71-43-2	Benzene		1	REJ	
108-86-1	Bromobenzene		1	REJ	
74-97-5	Bromochloromethane		1	REJ	
75-27-4	Bromodichloromethane		1	REJ	
75-25-2	Bromoform		1	REJ	
74-83-9	Bromomethane		1	REJ	
75-15-0	Carbon Disulfide		1	REJ	
56-23-5	Carbon Tetrachloride		1	REJ	
108-90-7	Chlorobenzene		1	REJ	
75-00-3	Chloroethane		1	REJ	
67-66-3	Chloroform		1	REJ	
74-87-3	Chloromethane		1	REJ	
156-59-2	Cis-1,2-Dichloroethene		1	REJ	
10061-01-5	Cis-1,3-Dichloropropene		1	REJ	
124-48-1	Dibromochloromethane		1	REJ	
74-95-3	Dibromomethane		1	REJ	
75-71-8	Dichlorodifluoromethane		1	REJ	
60-29-7	Ethyl Ether		1	REJ	

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

Project: LCB Sampling **Field ID: OG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.433 g
Final Vol: 5 mL

Lab ID #: 2304065-39
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.76%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene		1	REJ	
87-68-3	Hexachlorobutadiene		1	REJ	
67-72-1	Hexachloroethane		1	REJ	
98-82-8	Isopropylbenzene (Cumene)		1	REJ	
179601-23-1	m,p-Xylene		1	REJ	
74-88-4	Methyl Iodide		1	REJ	
1634-04-4	Methyl t-butyl ether		1	REJ	
75-09-2	Methylene Chloride		1	REJ	
91-20-3	Naphthalene		1	REJ	
104-51-8	n-Butylbenzene		1	REJ	
103-65-1	n-Propylbenzene		1	REJ	
95-47-6	o-Xylene		1	REJ	
76-01-7	Pentachloroethane		1	REJ	
99-87-6	p-Isopropyltoluene		1	REJ	
135-98-8	Sec-Butylbenzene		1	REJ	
100-42-5	Styrene		1	REJ	
98-06-6	Tert-Butylbenzene		1	REJ	
127-18-4	Tetrachloroethene		1	REJ	
109-99-9	Tetrahydrofuran		1	REJ	
108-88-3	Toluene		1	REJ	
156-60-5	Trans-1,2-Dichloroethene		1	REJ	
10061-02-6	Trans-1,3-Dichloropropene		1	REJ	
110-57-6	Trans-1,4-Dichloro-2-butene		1	REJ	
79-01-6	Trichloroethene		1	REJ	
75-69-4	Trichlorofluoromethane		1	REJ	
75-01-4	Vinyl Chloride		1	REJ	

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*0.00*	*10.0*		*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*0.00*	*10.0*		*80-120*
540-36-3	*1,4-Difluorobenzene*	*0.00*	*10.0*		*80-120*
460-00-4	*p-Bromofluorobenzene*	*0.00*	*10.0*		*80-120*
2037-26-5	*Toluene-D8*	*9.09*	*10.0*		*80-120*

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: B-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.926 g
Final Vol: 5 mL

Lab ID #: 2304065-40
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.85%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.04	1	U	1.04
71-55-6	1,1,1-Trichloroethane	1.04	1	U	1.04
79-34-5	1,1,2,2-Tetrachloroethane	1.04	1	U	1.04
79-00-5	1,1,2-Trichloroethane	1.04	1	U	1.04
76-13-1	1,1,2-Trichlorotrifluoroethane	1.04	1	U	1.04
75-34-3	1,1-Dichloroethane	1.04	1	U	1.04
75-35-4	1,1-Dichloroethene	1.04	1	U	1.04
563-58-6	1,1-Dichloropropene	1.04	1	U	1.04
87-61-6	1,2,3-Trichlorobenzene	1.04	1	UJ	1.04
96-18-4	1,2,3-Trichloropropane	1.04	1	UJ	1.04
120-82-1	1,2,4-Trichlorobenzene	1.04	1	UJ	1.04
95-63-6	1,2,4-Trimethylbenzene	1.04	1	UJ	1.04
96-12-8	1,2-Dibromo-3-Chloropropane	1.04	1	UJ	1.04
106-93-4	1,2-Dibromoethane	1.04	1	U	1.04
95-50-1	1,2-Dichlorobenzene	1.04	1	UJ	1.04
107-06-2	1,2-Dichloroethane	1.04	1	U	1.04
78-87-5	1,2-Dichloropropane	1.04	1	U	1.04
108-67-8	1,3,5-Trimethylbenzene	1.04	1	UJ	1.04
541-73-1	1,3-Dichlorobenzene	1.04	1	UJ	1.04
142-28-9	1,3-Dichloropropane	1.04	1	U	1.04
106-46-7	1,4-Dichlorobenzene	1.04	1	UJ	1.04
594-20-7	2,2-Dichloropropane	1.04	1	U	1.04
78-93-3	2-Butanone	1.04	1	UJ	1.04
95-49-8	2-Chlorotoluene	1.04	1	UJ	1.04
591-78-6	2-Hexanone	1.04	1	UJ	1.04
106-43-4	4-Chlorotoluene	1.04	1	UJ	1.04
108-10-1	4-Methyl-2-pentanone	1.04	1	UJ	1.04
67-64-1	Acetone	1.95	1	U	1.04
71-43-2	Benzene	1.04	1	U	1.04
108-86-1	Bromobenzene	1.04	1	UJ	1.04
74-97-5	Bromochloromethane	1.04	1	U	1.04
75-27-4	Bromodichloromethane	1.04	1	U	1.04
75-25-2	Bromoform	1.04	1	UJ	1.04
74-83-9	Bromomethane	2.09	1	U	2.09
75-15-0	Carbon Disulfide	1.04	1	U	1.04
56-23-5	Carbon Tetrachloride	1.04	1	U	1.04
108-90-7	Chlorobenzene	1.04	1	U	1.04
75-00-3	Chloroethane	1.04	1	UJ	1.04
67-66-3	Chloroform	1.04	1	U	1.04
74-87-3	Chloromethane	1.04	1	U	1.04
156-59-2	Cis-1,2-Dichloroethene	1.04	1	U	1.04
10061-01-5	Cis-1,3-Dichloropropene	1.04	1	U	1.04
124-48-1	Dibromochloromethane	1.04	1	U	1.04
74-95-3	Dibromomethane	1.04	1	U	1.04
75-71-8	Dichlorodifluoromethane	2.09	1	U	2.09
60-29-7	Ethyl Ether	1.04	1	U	1.04

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

Project: LCB Sampling — Field ID: B-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.926 g
Final Vol: 5 mL

Lab ID #: 2304065-40
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 80.85%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.04	1	U	1.04
87-68-3	Hexachlorobutadiene	1.04	1	UJ	1.04
67-72-1	Hexachloroethane	1.04	1	UJ	1.04
98-82-8	Isopropylbenzene (Cumene)	1.04	1	UJ	1.04
179601-23-1	m,p-Xylene	2.09	1	U	2.09
74-88-4	Methyl Iodide	1.04	1	UJ	1.04
1634-04-4	Methyl t-butyl ether	1.04	1	U	1.04
75-09-2	**Methylene Chloride**	**0.52**	1	**J**	**1.04**
91-20-3	Naphthalene	1.04	1	UJ	1.04
104-51-8	n-Butylbenzene	1.04	1	UJ	1.04
103-65-1	n-Propylbenzene	1.04	1	UJ	1.04
95-47-6	o-Xylene	1.04	1	U	1.04
76-01-7	Pentachloroethane	1.04	1	UJ	1.04
99-87-6	p-Isopropyltoluene	1.04	1	UJ	1.04
135-98-8	Sec-Butylbenzene	1.04	1	UJ	1.04
100-42-5	Styrene	1.04	1	U	1.04
98-06-6	Tert-Butylbenzene	1.04	1	UJ	1.04
127-18-4	Tetrachloroethene	1.04	1	U	1.04
109-99-9	Tetrahydrofuran	1.04	1	U	1.04
108-88-3	Toluene	1.04	1	U	1.04
156-60-5	Trans-1,2-Dichloroethene	1.04	1	U	1.04
10061-02-6	Trans-1,3-Dichloropropene	1.04	1	U	1.04
110-57-6	Trans-1,4-Dichloro-2-butene	2.09	1	U	2.09
79-01-6	Trichloroethene	1.04	1	U	1.04
75-69-4	Trichlorofluoromethane	1.04	1	U	1.04
75-01-4	Vinyl Chloride	1.04	1	U	1.04

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	12.0	10.0	120	80-120
17060-07-0	1,2-Dichloroethane-D4	12.0	10.0	120	80-120
540-36-3	1,4-Difluorobenzene	10.5	10.0	105	80-120
460-00-4	*p-Bromofluorobenzene*	*7.20*	*10.0*	*72*	*80-120*
2037-26-5	Toluene-D8	11.0	10.0	110	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: B-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.748 g
Final Vol: 5 mL

Lab ID #: 2304065-41
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.92%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.10	1	U	1.10
71-55-6	1,1,1-Trichloroethane	1.10	1	U	1.10
79-34-5	1,1,2,2-Tetrachloroethane	1.10	1	U	1.10
79-00-5	1,1,2-Trichloroethane	1.10	1	U	1.10
76-13-1	1,1,2-Trichlorotrifluoroethane	1.10	1	U	1.10
75-34-3	1,1-Dichloroethane	1.10	1	U	1.10
75-35-4	1,1-Dichloroethene	1.10	1	U	1.10
563-58-6	1,1-Dichloropropene	1.10	1	U	1.10
87-61-6	1,2,3-Trichlorobenzene	1.10	1	U	1.10
96-18-4	1,2,3-Trichloropropane	1.10	1	U	1.10
120-82-1	1,2,4-Trichlorobenzene	1.10	1	U	1.10
95-63-6	1,2,4-Trimethylbenzene	1.10	1	U	1.10
96-12-8	1,2-Dibromo-3-Chloropropane	1.10	1	UJ	1.10
106-93-4	1,2-Dibromoethane	1.10	1	U	1.10
95-50-1	1,2-Dichlorobenzene	1.10	1	U	1.10
107-06-2	1,2-Dichloroethane	1.10	1	U	1.10
78-87-5	1,2-Dichloropropane	1.10	1	U	1.10
108-67-8	1,3,5-Trimethylbenzene	1.10	1	U	1.10
541-73-1	1,3-Dichlorobenzene	1.10	1	U	1.10
142-28-9	1,3-Dichloropropane	1.10	1	U	1.10
106-46-7	1,4-Dichlorobenzene	1.10	1	U	1.10
594-20-7	2,2-Dichloropropane	1.10	1	U	1.10
78-93-3	2-Butanone	1.10	1	UJ	1.10
95-49-8	2-Chlorotoluene	1.10	1	U	1.10
591-78-6	2-Hexanone	1.10	1	UJ	1.10
106-43-4	4-Chlorotoluene	1.10	1	U	1.10
108-10-1	4-Methyl-2-pentanone	1.10	1	UJ	1.10
67-64-1	Acetone	1.35	1	U	1.10
71-43-2	Benzene	1.10	1	U	1.10
108-86-1	Bromobenzene	1.10	1	U	1.10
74-97-5	Bromochloromethane	1.10	1	U	1.10
75-27-4	Bromodichloromethane	1.10	1	U	1.10
75-25-2	Bromoform	1.10	1	U	1.10
74-83-9	Bromomethane	2.20	1	U	2.20
75-15-0	Carbon Disulfide	1.10	1	U	1.10
56-23-5	Carbon Tetrachloride	1.10	1	U	1.10
108-90-7	Chlorobenzene	1.10	1	U	1.10
75-00-3	Chloroethane	1.10	1	UJ	1.10
67-66-3	Chloroform	1.10	1	U	1.10
74-87-3	Chloromethane	1.10	1	U	1.10
156-59-2	Cis-1,2-Dichloroethene	1.10	1	U	1.10
10061-01-5	Cis-1,3-Dichloropropene	1.10	1	U	1.10
124-48-1	Dibromochloromethane	1.10	1	U	1.10
74-95-3	Dibromomethane	1.10	1	U	1.10
75-71-8	Dichlorodifluoromethane	2.20	1	U	2.20
60-29-7	Ethyl Ether	1.10	1	U	1.10

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

Project: LCB Sampling　　Field ID: B-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.748 g
Final Vol: 5 mL

Lab ID #: 2304065-41
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.92%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.10	1	U	1.10
87-68-3	Hexachlorobutadiene	1.10	1	U	1.10
67-72-1	Hexachloroethane	1.10	1	U	1.10
98-82-8	Isopropylbenzene (Cumene)	1.10	1	U	1.10
179601-23-1	m,p-Xylene	2.20	1	U	2.20
74-88-4	Methyl Iodide	1.10	1	UJ	1.10
1634-04-4	Methyl t-butyl ether	1.10	1	U	1.10
75-09-2	**Methylene Chloride**	**1.09**	1	**J**	**1.10**
91-20-3	Naphthalene	1.10	1	UJ	1.10
104-51-8	n-Butylbenzene	1.10	1	U	1.10
103-65-1	n-Propylbenzene	1.10	1	U	1.10
95-47-6	o-Xylene	1.10	1	U	1.10
76-01-7	Pentachloroethane	1.10	1	U	1.10
99-87-6	p-Isopropyltoluene	1.10	1	U	1.10
135-98-8	Sec-Butylbenzene	1.10	1	U	1.10
100-42-5	Styrene	1.10	1	U	1.10
98-06-6	Tert-Butylbenzene	1.10	1	U	1.10
127-18-4	Tetrachloroethene	1.10	1	U	1.10
109-99-9	Tetrahydrofuran	1.10	1	U	1.10
108-88-3	Toluene	1.10	1	U	1.10
156-60-5	Trans-1,2-Dichloroethene	1.10	1	U	1.10
10061-02-6	Trans-1,3-Dichloropropene	1.10	1	U	1.10
110-57-6	Trans-1,4-Dichloro-2-butene	2.20	1	U	2.20
79-01-6	Trichloroethene	1.10	1	U	1.10
75-69-4	Trichlorofluoromethane	1.10	1	U	1.10
75-01-4	Vinyl Chloride	1.10	1	U	1.10

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.3	10.0	113	80-120
17060-07-0	1,2-Dichloroethane-D4	11.4	10.0	114	80-120
540-36-3	1,4-Difluorobenzene	10.7	10.0	107	80-120
460-00-4	p-Bromofluorobenzene	8.06	10.0	81	80-120
2037-26-5	Toluene-D8	10.1	10.0	101	80-120

Authorized by: Dolores Montgomery　　**Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: KJ-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.546 g
Final Vol: 5 mL

Lab ID #: 2304065-42
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 79.57%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.13	1	U	1.13
71-55-6	1,1,1-Trichloroethane	1.13	1	U	1.13
79-34-5	1,1,2,2-Tetrachloroethane	1.13	1	U	1.13
79-00-5	1,1,2-Trichloroethane	1.13	1	U	1.13
76-13-1	1,1,2-Trichlorotrifluoroethane	1.13	1	U	1.13
75-34-3	1,1-Dichloroethane	1.13	1	U	1.13
75-35-4	1,1-Dichloroethene	1.13	1	U	1.13
563-58-6	1,1-Dichloropropene	1.13	1	U	1.13
87-61-6	1,2,3-Trichlorobenzene	1.13	1	U	1.13
96-18-4	1,2,3-Trichloropropane	1.13	1	U	1.13
120-82-1	1,2,4-Trichlorobenzene	1.13	1	U	1.13
95-63-6	1,2,4-Trimethylbenzene	1.13	1	U	1.13
96-12-8	1,2-Dibromo-3-Chloropropane	1.13	1	UJ	1.13
106-93-4	1,2-Dibromoethane	1.13	1	U	1.13
95-50-1	1,2-Dichlorobenzene	1.13	1	U	1.13
107-06-2	1,2-Dichloroethane	1.13	1	U	1.13
78-87-5	1,2-Dichloropropane	1.13	1	U	1.13
108-67-8	1,3,5-Trimethylbenzene	1.13	1	U	1.13
541-73-1	1,3-Dichlorobenzene	1.13	1	U	1.13
142-28-9	1,3-Dichloropropane	1.13	1	U	1.13
106-46-7	1,4-Dichlorobenzene	1.13	1	U	1.13
594-20-7	2,2-Dichloropropane	1.13	1	U	1.13
78-93-3	2-Butanone	1.13	1	UJ	1.13
95-49-8	2-Chlorotoluene	1.13	1	U	1.13
591-78-6	2-Hexanone	1.13	1	UJ	1.13
106-43-4	4-Chlorotoluene	1.13	1	U	1.13
108-10-1	4-Methyl-2-pentanone	1.13	1	UJ	1.13
67-64-1	Acetone	1.13	1	U	1.13
71-43-2	Benzene	1.13	1	U	1.13
108-86-1	Bromobenzene	1.13	1	U	1.13
74-97-5	Bromochloromethane	1.13	1	U	1.13
75-27-4	Bromodichloromethane	1.13	1	U	1.13
75-25-2	Bromoform	1.13	1	U	1.13
74-83-9	Bromomethane	2.27	1	U	2.27
75-15-0	Carbon Disulfide	1.13	1	U	1.13
56-23-5	Carbon Tetrachloride	1.13	1	U	1.13
108-90-7	Chlorobenzene	1.13	1	U	1.13
75-00-3	Chloroethane	1.13	1	UJ	1.13
67-66-3	Chloroform	1.13	1	U	1.13
74-87-3	Chloromethane	1.13	1	U	1.13
156-59-2	Cis-1,2-Dichloroethene	1.13	1	U	1.13
10061-01-5	Cis-1,3-Dichloropropene	1.13	1	U	1.13
124-48-1	Dibromochloromethane	1.13	1	U	1.13
74-95-3	Dibromomethane	1.13	1	U	1.13
75-71-8	Dichlorodifluoromethane	2.27	1	U	2.27
60-29-7	Ethyl Ether	1.13	1	U	1.13

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

Project: LCB Sampling

Field ID: KJ-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.546 g
Final Vol: 5 mL

Lab ID #: 2304065-42
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 79.57%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.13	1	U	1.13
87-68-3	Hexachlorobutadiene	1.13	1	U	1.13
67-72-1	Hexachloroethane	1.13	1	U	1.13
98-82-8	Isopropylbenzene (Cumene)	1.13	1	U	1.13
179601-23-1	m,p-Xylene	2.27	1	U	2.27
74-88-4	Methyl Iodide	1.13	1	UJ	1.13
1634-04-4	Methyl t-butyl ether	1.13	1	U	1.13
75-09-2	**Methylene Chloride**	**1.43**	1	**J**	**1.13**
91-20-3	Naphthalene	1.13	1	UJ	1.13
104-51-8	n-Butylbenzene	1.13	1	U	1.13
103-65-1	n-Propylbenzene	1.13	1	U	1.13
95-47-6	o-Xylene	1.13	1	U	1.13
76-01-7	Pentachloroethane	1.13	1	U	1.13
99-87-6	p-Isopropyltoluene	1.13	1	U	1.13
135-98-8	Sec-Butylbenzene	1.13	1	U	1.13
100-42-5	Styrene	1.13	1	U	1.13
98-06-6	Tert-Butylbenzene	1.13	1	U	1.13
127-18-4	Tetrachloroethene	1.13	1	U	1.13
109-99-9	Tetrahydrofuran	1.13	1	U	1.13
108-88-3	Toluene	1.13	1	U	1.13
156-60-5	Trans-1,2-Dichloroethene	1.13	1	U	1.13
10061-02-6	Trans-1,3-Dichloropropene	1.13	1	U	1.13
110-57-6	Trans-1,4-Dichloro-2-butene	2.27	1	U	2.27
79-01-6	Trichloroethene	1.13	1	U	1.13
75-69-4	Trichlorofluoromethane	1.13	1	U	1.13
75-01-4	Vinyl Chloride	1.13	1	U	1.13

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.6	10.0	116	80-120
17060-07-0	1,2-Dichloroethane-D4	11.9	10.0	119	80-120
540-36-3	1,4-Difluorobenzene	10.5	10.0	105	80-120
460-00-4	*p-Bromofluorobenzene*	*7.83*	*10.0*	*78*	*80-120*
2037-26-5	Toluene-D8	10.2	10.0	102	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: KJ-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.645 g
Final Vol: 5 mL

Lab ID #: 2304065-43
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.46%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.13	1	U	1.13
71-55-6	1,1,1-Trichloroethane	1.13	1	U	1.13
79-34-5	1,1,2,2-Tetrachloroethane	1.13	1	U	1.13
79-00-5	1,1,2-Trichloroethane	1.13	1	U	1.13
76-13-1	1,1,2-Trichlorotrifluoroethane	1.13	1	U	1.13
75-34-3	1,1-Dichloroethane	1.13	1	U	1.13
75-35-4	1,1-Dichloroethene	1.13	1	U	1.13
563-58-6	1,1-Dichloropropene	1.13	1	U	1.13
87-61-6	1,2,3-Trichlorobenzene	1.13	1	UJ	1.13
96-18-4	1,2,3-Trichloropropane	1.13	1	UJ	1.13
120-82-1	1,2,4-Trichlorobenzene	1.13	1	UJ	1.13
95-63-6	1,2,4-Trimethylbenzene	1.13	1	UJ	1.13
96-12-8	1,2-Dibromo-3-Chloropropane	1.13	1	UJ	1.13
106-93-4	1,2-Dibromoethane	1.13	1	U	1.13
95-50-1	1,2-Dichlorobenzene	1.13	1	UJ	1.13
107-06-2	1,2-Dichloroethane	1.13	1	U	1.13
78-87-5	1,2-Dichloropropane	1.13	1	U	1.13
108-67-8	1,3,5-Trimethylbenzene	1.13	1	UJ	1.13
541-73-1	1,3-Dichlorobenzene	1.13	1	UJ	1.13
142-28-9	1,3-Dichloropropane	1.13	1	U	1.13
106-46-7	1,4-Dichlorobenzene	1.13	1	UJ	1.13
594-20-7	2,2-Dichloropropane	1.13	1	U	1.13
78-93-3	2-Butanone	1.13	1	UJ	1.13
95-49-8	2-Chlorotoluene	1.13	1	UJ	1.13
591-78-6	2-Hexanone	1.13	1	UJ	1.13
106-43-4	4-Chlorotoluene	1.13	1	UJ	1.13
108-10-1	4-Methyl-2-pentanone	1.13	1	UJ	1.13
67-64-1	Acetone	1.13	1	U	1.13
71-43-2	Benzene	1.13	1	U	1.13
108-86-1	Bromobenzene	1.13	1	UJ	1.13
74-97-5	Bromochloromethane	1.13	1	U	1.13
75-27-4	Bromodichloromethane	1.13	1	U	1.13
75-25-2	Bromoform	1.13	1	UJ	1.13
74-83-9	Bromomethane	2.26	1	U	2.26
75-15-0	Carbon Disulfide	1.13	1	U	1.13
56-23-5	Carbon Tetrachloride	1.13	1	U	1.13
108-90-7	Chlorobenzene	1.13	1	U	1.13
75-00-3	Chloroethane	1.13	1	UJ	1.13
67-66-3	Chloroform	1.13	1	U	1.13
74-87-3	Chloromethane	1.13	1	U	1.13
156-59-2	Cis-1,2-Dichloroethene	1.13	1	U	1.13
10061-01-5	Cis-1,3-Dichloropropene	1.13	1	U	1.13
124-48-1	Dibromochloromethane	1.13	1	U	1.13
74-95-3	Dibromomethane	1.13	1	U	1.13
75-71-8	Dichlorodifluoromethane	2.26	1	U	2.26
60-29-7	Ethyl Ether	1.13	1	U	1.13

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

Project: LCB Sampling — Field ID: KJ-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.645 g
Final Vol: 5 mL

Lab ID #: 2304065-43
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.46%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.13	1	U	1.13
87-68-3	Hexachlorobutadiene	1.13	1	UJ	1.13
67-72-1	Hexachloroethane	1.13	1	UJ	1.13
98-82-8	Isopropylbenzene (Cumene)	1.13	1	UJ	1.13
179601-23-1	m,p-Xylene	2.26	1	U	2.26
74-88-4	Methyl Iodide	1.13	1	UJ	1.13
1634-04-4	Methyl t-butyl ether	1.13	1	U	1.13
75-09-2	**Methylene Chloride**	**1.05**	1	**J**	**1.13**
91-20-3	Naphthalene	1.13	1	UJ	1.13
104-51-8	n-Butylbenzene	1.13	1	UJ	1.13
103-65-1	n-Propylbenzene	1.13	1	UJ	1.13
95-47-6	o-Xylene	1.13	1	U	1.13
76-01-7	Pentachloroethane	1.13	1	UJ	1.13
99-87-6	p-Isopropyltoluene	1.13	1	UJ	1.13
135-98-8	Sec-Butylbenzene	1.13	1	UJ	1.13
100-42-5	Styrene	1.13	1	U	1.13
98-06-6	Tert-Butylbenzene	1.13	1	UJ	1.13
127-18-4	Tetrachloroethene	1.13	1	U	1.13
109-99-9	Tetrahydrofuran	1.13	1	U	1.13
108-88-3	Toluene	1.13	1	U	1.13
156-60-5	Trans-1,2-Dichloroethene	1.13	1	U	1.13
10061-02-6	Trans-1,3-Dichloropropene	1.13	1	U	1.13
110-57-6	Trans-1,4-Dichloro-2-butene	2.26	1	U	2.26
79-01-6	Trichloroethene	1.13	1	U	1.13
75-69-4	Trichlorofluoromethane	1.13	1	U	1.13
75-01-4	Vinyl Chloride	1.13	1	U	1.13

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*12.2*	*10.0*	*122*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*13.3*	*10.0*	*133*	*80-120*
540-36-3	1,4-Difluorobenzene	10.5	10.0	105	80-120
460-00-4	*p-Bromofluorobenzene*	*7.23*	*10.0*	*72*	*80-120*
2037-26-5	Toluene-D8	10.4	10.0	104	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling **Field ID: KJ-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.016 g
Final Vol: 5 mL

Lab ID #: 2304065-44
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.45%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.27	1	U	1.27
71-55-6	1,1,1-Trichloroethane	1.27	1	U	1.27
79-34-5	1,1,2,2-Tetrachloroethane	1.27	1	U	1.27
79-00-5	1,1,2-Trichloroethane	1.27	1	U	1.27
76-13-1	1,1,2-Trichlorotrifluoroethane	1.27	1	U	1.27
75-34-3	1,1-Dichloroethane	1.27	1	U	1.27
75-35-4	1,1-Dichloroethene	1.27	1	U	1.27
563-58-6	1,1-Dichloropropene	1.27	1	U	1.27
87-61-6	1,2,3-Trichlorobenzene	1.27	1	UJ	1.27
96-18-4	1,2,3-Trichloropropane	1.27	1	UJ	1.27
120-82-1	1,2,4-Trichlorobenzene	1.27	1	UJ	1.27
95-63-6	1,2,4-Trimethylbenzene	1.27	1	UJ	1.27
96-12-8	1,2-Dibromo-3-Chloropropane	1.27	1	UJ	1.27
106-93-4	1,2-Dibromoethane	1.27	1	U	1.27
95-50-1	1,2-Dichlorobenzene	1.27	1	UJ	1.27
107-06-2	1,2-Dichloroethane	1.27	1	U	1.27
78-87-5	1,2-Dichloropropane	1.27	1	U	1.27
108-67-8	1,3,5-Trimethylbenzene	1.27	1	UJ	1.27
541-73-1	1,3-Dichlorobenzene	1.27	1	UJ	1.27
142-28-9	1,3-Dichloropropane	1.27	1	U	1.27
106-46-7	1,4-Dichlorobenzene	1.27	1	UJ	1.27
594-20-7	2,2-Dichloropropane	1.27	1	U	1.27
78-93-3	2-Butanone	1.27	1	UJ	1.27
95-49-8	2-Chlorotoluene	1.27	1	UJ	1.27
591-78-6	2-Hexanone	1.27	1	UJ	1.27
106-43-4	4-Chlorotoluene	1.27	1	UJ	1.27
108-10-1	4-Methyl-2-pentanone	1.27	1	UJ	1.27
67-64-1	Acetone	1.27	1	U	1.27
71-43-2	Benzene	1.27	1	U	1.27
108-86-1	Bromobenzene	1.27	1	UJ	1.27
74-97-5	Bromochloromethane	1.27	1	U	1.27
75-27-4	Bromodichloromethane	1.27	1	U	1.27
75-25-2	Bromoform	1.27	1	UJ	1.27
74-83-9	Bromomethane	2.54	1	U	2.54
75-15-0	Carbon Disulfide	1.27	1	U	1.27
56-23-5	Carbon Tetrachloride	1.27	1	U	1.27
108-90-7	Chlorobenzene	1.27	1	U	1.27
75-00-3	Chloroethane	1.27	1	UJ	1.27
67-66-3	Chloroform	1.27	1	U	1.27
74-87-3	Chloromethane	1.27	1	U	1.27
156-59-2	Cis-1,2-Dichloroethene	1.27	1	U	1.27
10061-01-5	Cis-1,3-Dichloropropene	1.27	1	U	1.27
124-48-1	Dibromochloromethane	1.27	1	U	1.27
74-95-3	Dibromomethane	1.27	1	U	1.27
75-71-8	Dichlorodifluoromethane	2.54	1	U	2.54
60-29-7	Ethyl Ether	1.27	1	U	1.27

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

Project: LCB Sampling

Field ID: KJ-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.016 g
Final Vol: 5 mL

Lab ID #: 2304065-44
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 78.45%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.27	1	U	1.27
87-68-3	Hexachlorobutadiene	1.27	1	UJ	1.27
67-72-1	Hexachloroethane	1.27	1	UJ	1.27
98-82-8	Isopropylbenzene (Cumene)	1.27	1	UJ	1.27
179601-23-1	m,p-Xylene	2.54	1	U	2.54
74-88-4	Methyl Iodide	1.27	1	UJ	1.27
1634-04-4	Methyl t-butyl ether	1.27	1	U	1.27
75-09-2	**Methylene Chloride**	**1.49**	1	**J**	**1.27**
91-20-3	Naphthalene	1.27	1	UJ	1.27
104-51-8	n-Butylbenzene	1.27	1	UJ	1.27
103-65-1	n-Propylbenzene	1.27	1	UJ	1.27
95-47-6	o-Xylene	1.27	1	U	1.27
76-01-7	Pentachloroethane	1.27	1	UJ	1.27
99-87-6	p-Isopropyltoluene	1.27	1	UJ	1.27
135-98-8	Sec-Butylbenzene	1.27	1	UJ	1.27
100-42-5	Styrene	1.27	1	U	1.27
98-06-6	Tert-Butylbenzene	1.27	1	UJ	1.27
127-18-4	Tetrachloroethene	1.27	1	U	1.27
109-99-9	Tetrahydrofuran	1.27	1	U	1.27
108-88-3	Toluene	1.27	1	U	1.27
156-60-5	Trans-1,2-Dichloroethene	1.27	1	U	1.27
10061-02-6	Trans-1,3-Dichloropropene	1.27	1	U	1.27
110-57-6	Trans-1,4-Dichloro-2-butene	2.54	1	U	2.54
79-01-6	Trichloroethene	1.27	1	U	1.27
75-69-4	Trichlorofluoromethane	1.27	1	U	1.27
75-01-4	Vinyl Chloride	1.27	1	U	1.27

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.9	10.0	109	80-120
17060-07-0	1,2-Dichloroethane-D4	11.7	10.0	117	80-120
540-36-3	1,4-Difluorobenzene	10.5	10.0	105	80-120
460-00-4	*p-Bromofluorobenzene*	*7.46*	*10.0*	*75*	*80-120*
2037-26-5	Toluene-D8	10.6	10.0	106	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: BM-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 6.193 g
Final Vol: 5 mL

Lab ID #: 2304065-45
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.35%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	0.91	1	U	0.91
71-55-6	1,1,1-Trichloroethane	0.91	1	U	0.91
79-34-5	1,1,2,2-Tetrachloroethane	0.91	1	U	0.91
79-00-5	1,1,2-Trichloroethane	0.91	1	U	0.91
76-13-1	1,1,2-Trichlorotrifluoroethane	0.91	1	U	0.91
75-34-3	1,1-Dichloroethane	0.91	1	U	0.91
75-35-4	1,1-Dichloroethene	0.91	1	U	0.91
563-58-6	1,1-Dichloropropene	0.91	1	U	0.91
87-61-6	1,2,3-Trichlorobenzene	0.91	1	UJ	0.91
96-18-4	1,2,3-Trichloropropane	0.91	1	UJ	0.91
120-82-1	1,2,4-Trichlorobenzene	0.91	1	UJ	0.91
95-63-6	1,2,4-Trimethylbenzene	0.91	1	UJ	0.91
96-12-8	1,2-Dibromo-3-Chloropropane	0.91	1	UJ	0.91
106-93-4	1,2-Dibromoethane	0.91	1	U	0.91
95-50-1	1,2-Dichlorobenzene	0.91	1	UJ	0.91
107-06-2	1,2-Dichloroethane	0.91	1	U	0.91
78-87-5	1,2-Dichloropropane	0.91	1	U	0.91
108-67-8	1,3,5-Trimethylbenzene	0.91	1	UJ	0.91
541-73-1	1,3-Dichlorobenzene	0.91	1	UJ	0.91
142-28-9	1,3-Dichloropropane	0.91	1	U	0.91
106-46-7	1,4-Dichlorobenzene	0.91	1	UJ	0.91
594-20-7	2,2-Dichloropropane	0.91	1	U	0.91
78-93-3	2-Butanone	0.91	1	UJ	0.91
95-49-8	2-Chlorotoluene	0.91	1	UJ	0.91
591-78-6	2-Hexanone	0.91	1	UJ	0.91
106-43-4	4-Chlorotoluene	0.91	1	UJ	0.91
108-10-1	4-Methyl-2-pentanone	0.91	1	UJ	0.91
67-64-1	Acetone	0.91	1	U	0.91
71-43-2	Benzene	0.91	1	U	0.91
108-86-1	Bromobenzene	0.91	1	UJ	0.91
74-97-5	Bromochloromethane	0.91	1	U	0.91
75-27-4	Bromodichloromethane	0.91	1	U	0.91
75-25-2	Bromoform	0.91	1	UJ	0.91
74-83-9	Bromomethane	1.83	1	U	1.83
75-15-0	Carbon Disulfide	0.91	1	U	0.91
56-23-5	Carbon Tetrachloride	0.91	1	U	0.91
108-90-7	Chlorobenzene	0.91	1	U	0.91
75-00-3	Chloroethane	0.91	1	UJ	0.91
67-66-3	Chloroform	0.91	1	U	0.91
74-87-3	Chloromethane	0.91	1	U	0.91
156-59-2	Cis-1,2-Dichloroethene	0.91	1	U	0.91
10061-01-5	Cis-1,3-Dichloropropene	0.91	1	U	0.91
124-48-1	Dibromochloromethane	0.91	1	U	0.91
74-95-3	Dibromomethane	0.91	1	U	0.91
75-71-8	Dichlorodifluoromethane	1.83	1	U	1.83
60-29-7	Ethyl Ether	0.91	1	U	0.91

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

Project: LCB Sampling

Field ID: BM-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 6.193 g
Final Vol: 5 mL

Lab ID #: 2304065-45
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.35%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	0.91	1	U	0.91
87-68-3	Hexachlorobutadiene	0.91	1	UJ	0.91
67-72-1	Hexachloroethane	0.91	1	UJ	0.91
98-82-8	Isopropylbenzene (Cumene)	0.91	1	UJ	0.91
179601-23-1	m,p-Xylene	1.83	1	U	1.83
74-88-4	Methyl Iodide	0.91	1	UJ	0.91
1634-04-4	Methyl t-butyl ether	0.91	1	U	0.91
75-09-2	**Methylene Chloride**	**1.26**	1	**J**	**0.91**
91-20-3	Naphthalene	0.91	1	UJ	0.91
104-51-8	n-Butylbenzene	0.91	1	UJ	0.91
103-65-1	n-Propylbenzene	0.91	1	UJ	0.91
95-47-6	o-Xylene	0.91	1	U	0.91
76-01-7	Pentachloroethane	0.91	1	UJ	0.91
99-87-6	p-Isopropyltoluene	0.91	1	UJ	0.91
135-98-8	Sec-Butylbenzene	0.91	1	UJ	0.91
100-42-5	Styrene	0.91	1	U	0.91
98-06-6	Tert-Butylbenzene	0.91	1	UJ	0.91
127-18-4	Tetrachloroethene	0.91	1	U	0.91
109-99-9	Tetrahydrofuran	0.91	1	U	0.91
108-88-3	Toluene	0.91	1	U	0.91
156-60-5	Trans-1,2-Dichloroethene	0.91	1	U	0.91
10061-02-6	Trans-1,3-Dichloropropene	0.91	1	U	0.91
110-57-6	Trans-1,4-Dichloro-2-butene	1.83	1	U	1.83
79-01-6	Trichloroethene	0.91	1	U	0.91
75-69-4	Trichlorofluoromethane	0.91	1	U	0.91
75-01-4	Vinyl Chloride	0.91	1	U	0.91

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.5	10.0	115	80-120
17060-07-0	1,2-Dichloroethane-D4	11.7	10.0	117	80-120
540-36-3	1,4-Difluorobenzene	10.6	10.0	106	80-120
460-00-4	*p-Bromofluorobenzene*	*7.56*	*10.0*	*76*	*80-120*
2037-26-5	Toluene-D8	10.4	10.0	104	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: BM-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.359 g
Final Vol: 5 mL

Lab ID #: 2304065-46
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.56%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.08	1	UJ	1.08
71-55-6	1,1,1-Trichloroethane	1.08	1	UJ	1.08
79-34-5	1,1,2,2-Tetrachloroethane	1.08	1	UJ	1.08
79-00-5	1,1,2-Trichloroethane	1.08	1	UJ	1.08
76-13-1	1,1,2-Trichlorotrifluoroethane	1.08	1	UJ	1.08
75-34-3	1,1-Dichloroethane	1.08	1	UJ	1.08
75-35-4	1,1-Dichloroethene	1.08	1	UJ	1.08
563-58-6	1,1-Dichloropropene	1.08	1	UJ	1.08
87-61-6	1,2,3-Trichlorobenzene	1.08	1	UJ	1.08
96-18-4	1,2,3-Trichloropropane	1.08	1	UJ	1.08
120-82-1	1,2,4-Trichlorobenzene	1.08	1	UJ	1.08
95-63-6	1,2,4-Trimethylbenzene	1.08	1	UJ	1.08
96-12-8	1,2-Dibromo-3-Chloropropane	1.08	1	UJ	1.08
106-93-4	1,2-Dibromoethane	1.08	1	UJ	1.08
95-50-1	1,2-Dichlorobenzene	1.08	1	UJ	1.08
107-06-2	1,2-Dichloroethane	1.08	1	UJ	1.08
78-87-5	1,2-Dichloropropane	1.08	1	UJ	1.08
108-67-8	1,3,5-Trimethylbenzene	1.08	1	UJ	1.08
541-73-1	1,3-Dichlorobenzene	1.08	1	UJ	1.08
142-28-9	1,3-Dichloropropane	1.08	1	UJ	1.08
106-46-7	1,4-Dichlorobenzene	1.08	1	UJ	1.08
594-20-7	2,2-Dichloropropane	1.08	1	UJ	1.08
78-93-3	2-Butanone	1.08	1	UJ	1.08
95-49-8	2-Chlorotoluene	1.08	1	UJ	1.08
591-78-6	2-Hexanone	1.08	1	UJ	1.08
106-43-4	4-Chlorotoluene	1.08	1	UJ	1.08
108-10-1	4-Methyl-2-pentanone	1.08	1	UJ	1.08
67-64-1	Acetone	1.08	1	UJ	1.08
71-43-2	Benzene	1.08	1	UJ	1.08
108-86-1	Bromobenzene	1.08	1	UJ	1.08
74-97-5	Bromochloromethane	1.08	1	UJ	1.08
75-27-4	Bromodichloromethane	1.08	1	UJ	1.08
75-25-2	Bromoform	1.08	1	UJ	1.08
74-83-9	Bromomethane	2.16	1	UJ	2.16
75-15-0	Carbon Disulfide	1.08	1	UJ	1.08
56-23-5	Carbon Tetrachloride	1.08	1	UJ	1.08
108-90-7	Chlorobenzene	1.08	1	UJ	1.08
75-00-3	Chloroethane	1.08	1	UJ	1.08
67-66-3	Chloroform	1.08	1	UJ	1.08
74-87-3	Chloromethane	1.08	1	UJ	1.08
156-59-2	Cis-1,2-Dichloroethene	1.08	1	UJ	1.08
10061-01-5	Cis-1,3-Dichloropropene	1.08	1	UJ	1.08
124-48-1	Dibromochloromethane	1.08	1	UJ	1.08
74-95-3	Dibromomethane	1.08	1	UJ	1.08
75-71-8	Dichlorodifluoromethane	2.16	1	UJ	2.16
60-29-7	Ethyl Ether	1.08	1	UJ	1.08

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

Project: LCB Sampling

Field ID: BM-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.359 g
Final Vol: 5 mL

Lab ID #: 2304065-46
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 86.56%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.08	1	UJ	1.08
87-68-3	Hexachlorobutadiene	1.08	1	UJ	1.08
67-72-1	Hexachloroethane	1.08	1	UJ	1.08
98-82-8	Isopropylbenzene (Cumene)	1.08	1	UJ	1.08
179601-23-1	m,p-Xylene	2.16	1	UJ	2.16
74-88-4	Methyl Iodide	1.08	1	UJ	1.08
1634-04-4	Methyl t-butyl ether	1.08	1	UJ	1.08
75-09-2	Methylene Chloride	1.08	1	UJ	1.08
91-20-3	Naphthalene	1.08	1	UJ	1.08
104-51-8	n-Butylbenzene	1.08	1	UJ	1.08
103-65-1	n-Propylbenzene	1.08	1	UJ	1.08
95-47-6	o-Xylene	1.08	1	UJ	1.08
76-01-7	Pentachloroethane	1.08	1	UJ	1.08
99-87-6	p-Isopropyltoluene	1.08	1	UJ	1.08
135-98-8	Sec-Butylbenzene	1.08	1	UJ	1.08
100-42-5	Styrene	1.08	1	UJ	1.08
98-06-6	Tert-Butylbenzene	1.08	1	UJ	1.08
127-18-4	Tetrachloroethene	1.08	1	UJ	1.08
109-99-9	Tetrahydrofuran	1.08	1	UJ	1.08
108-88-3	Toluene	1.08	1	UJ	1.08
156-60-5	Trans-1,2-Dichloroethene	1.08	1	UJ	1.08
10061-02-6	Trans-1,3-Dichloropropene	1.08	1	UJ	1.08
110-57-6	Trans-1,4-Dichloro-2-butene	2.16	1	UJ	2.16
79-01-6	Trichloroethene	1.08	1	UJ	1.08
75-69-4	Trichlorofluoromethane	1.08	1	UJ	1.08
75-01-4	Vinyl Chloride	1.08	1	UJ	1.08

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*13.5*	*10.0*	*135*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*15.9*	*10.0*	*159*	*80-120*
540-36-3	1,4-Difluorobenzene	11.0	10.0	110	80-120
460-00-4	*p-Bromofluorobenzene*	*6.52*	*10.0*	*65*	*80-120*
2037-26-5	Toluene-D8	10.1	10.0	101	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: BM-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.389 g
Final Vol: 5 mL

Lab ID #: 2304065-47
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.38%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.06	1	UJ	1.06
71-55-6	1,1,1-Trichloroethane	1.06	1	UJ	1.06
79-34-5	1,1,2,2-Tetrachloroethane	1.06	1	UJ	1.06
79-00-5	1,1,2-Trichloroethane	1.06	1	UJ	1.06
76-13-1	1,1,2-Trichlorotrifluoroethane	1.06	1	UJ	1.06
75-34-3	1,1-Dichloroethane	1.06	1	UJ	1.06
75-35-4	1,1-Dichloroethene	1.06	1	UJ	1.06
563-58-6	1,1-Dichloropropene	1.06	1	UJ	1.06
87-61-6	1,2,3-Trichlorobenzene		1	REJ	
96-18-4	1,2,3-Trichloropropane		1	REJ	
120-82-1	1,2,4-Trichlorobenzene		1	REJ	
95-63-6	1,2,4-Trimethylbenzene		1	REJ	
96-12-8	1,2-Dibromo-3-Chloropropane		1	REJ	
106-93-4	1,2-Dibromoethane	1.06	1	UJ	1.06
95-50-1	1,2-Dichlorobenzene		1	REJ	
107-06-2	1,2-Dichloroethane	1.06	1	UJ	1.06
78-87-5	1,2-Dichloropropane	1.06	1	UJ	1.06
108-67-8	1,3,5-Trimethylbenzene		1	REJ	
541-73-1	1,3-Dichlorobenzene		1	REJ	
142-28-9	1,3-Dichloropropane	1.06	1	UJ	1.06
106-46-7	1,4-Dichlorobenzene		1	REJ	
594-20-7	2,2-Dichloropropane	1.06	1	UJ	1.06
78-93-3	2-Butanone	1.06	1	UJ	1.06
95-49-8	2-Chlorotoluene		1	REJ	
591-78-6	2-Hexanone	1.06	1	UJ	1.06
106-43-4	4-Chlorotoluene		1	REJ	
108-10-1	4-Methyl-2-pentanone	1.06	1	UJ	1.06
67-64-1	Acetone	1.06	1	UJ	1.06
71-43-2	Benzene	1.06	1	UJ	1.06
108-86-1	Bromobenzene		1	REJ	
74-97-5	Bromochloromethane	1.06	1	UJ	1.06
75-27-4	Bromodichloromethane	1.06	1	UJ	1.06
75-25-2	Bromoform		1	REJ	
74-83-9	Bromomethane	2.12	1	UJ	2.12
75-15-0	Carbon Disulfide	1.06	1	UJ	1.06
56-23-5	Carbon Tetrachloride	1.06	1	UJ	1.06
108-90-7	Chlorobenzene	1.06	1	UJ	1.06
75-00-3	Chloroethane	1.06	1	UJ	1.06
67-66-3	Chloroform	1.06	1	UJ	1.06
74-87-3	Chloromethane	1.06	1	UJ	1.06
156-59-2	Cis-1,2-Dichloroethene	1.06	1	UJ	1.06
10061-01-5	Cis-1,3-Dichloropropene	1.06	1	UJ	1.06
124-48-1	Dibromochloromethane	1.06	1	UJ	1.06
74-95-3	Dibromomethane	1.06	1	UJ	1.06
75-71-8	Dichlorodifluoromethane	2.12	1	UJ	2.12
60-29-7	Ethyl Ether	1.06	1	UJ	1.06

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

Project: LCB Sampling **Field ID: BM-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.389 g
Final Vol: 5 mL

Lab ID #: 2304065-47
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 87.38%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.06	1	UJ	1.06
87-68-3	Hexachlorobutadiene		1	REJ	
67-72-1	Hexachloroethane		1	REJ	
98-82-8	Isopropylbenzene (Cumene)		1	REJ	
179601-23-1	m,p-Xylene	2.12	1	UJ	2.12
74-88-4	Methyl Iodide	1.06	1	UJ	1.06
1634-04-4	Methyl t-butyl ether	1.06	1	UJ	1.06
75-09-2	Methylene Chloride	1.06	1	UJ	1.06
91-20-3	Naphthalene		1	REJ	
104-51-8	n-Butylbenzene		1	REJ	
103-65-1	n-Propylbenzene		1	REJ	
95-47-6	o-Xylene	1.06	1	UJ	1.06
76-01-7	Pentachloroethane		1	REJ	
99-87-6	p-Isopropyltoluene		1	REJ	
135-98-8	Sec-Butylbenzene		1	REJ	
100-42-5	Styrene	1.06	1	UJ	1.06
98-06-6	Tert-Butylbenzene		1	REJ	
127-18-4	Tetrachloroethene	1.06	1	UJ	1.06
109-99-9	Tetrahydrofuran	1.06	1	UJ	1.06
108-88-3	Toluene	1.06	1	UJ	1.06
156-60-5	Trans-1,2-Dichloroethene	1.06	1	UJ	1.06
10061-02-6	Trans-1,3-Dichloropropene	1.06	1	UJ	1.06
110-57-6	Trans-1,4-Dichloro-2-butene	2.12	1	UJ	2.12
79-01-6	Trichloroethene	1.06	1	UJ	1.06
75-69-4	Trichlorofluoromethane	1.06	1	UJ	1.06
75-01-4	Vinyl Chloride	1.06	1	UJ	1.06

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	*1,2-Dichlorobenzene-D4*	*13.5*	*10.0*	*135*	*80-120*
17060-07-0	*1,2-Dichloroethane-D4*	*17.4*	*10.0*	*174*	*80-120*
540-36-3	1,4-Difluorobenzene	10.5	10.0	105	80-120
460-00-4	*p-Bromofluorobenzene*	*5.91*	*10.0*	*59*	*80-120*
2037-26-5	Toluene-D8	10.0	10.0	100	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

Field ID: TP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 6.007 g
Final Vol: 5 mL

Lab ID #: 2304065-48
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.61%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	0.94	1	U	0.94
71-55-6	1,1,1-Trichloroethane	0.94	1	U	0.94
79-34-5	1,1,2,2-Tetrachloroethane	0.94	1	U	0.94
79-00-5	1,1,2-Trichloroethane	0.94	1	U	0.94
76-13-1	1,1,2-Trichlorotrifluoroethane	0.94	1	U	0.94
75-34-3	1,1-Dichloroethane	0.94	1	U	0.94
75-35-4	1,1-Dichloroethene	0.94	1	U	0.94
563-58-6	1,1-Dichloropropene	0.94	1	U	0.94
87-61-6	1,2,3-Trichlorobenzene	0.94	1	UJ	0.94
96-18-4	1,2,3-Trichloropropane	0.94	1	UJ	0.94
120-82-1	1,2,4-Trichlorobenzene	0.94	1	UJ	0.94
95-63-6	1,2,4-Trimethylbenzene	0.94	1	UJ	0.94
96-12-8	1,2-Dibromo-3-Chloropropane	0.94	1	UJ	0.94
106-93-4	1,2-Dibromoethane	0.94	1	U	0.94
95-50-1	1,2-Dichlorobenzene	0.94	1	UJ	0.94
107-06-2	1,2-Dichloroethane	0.94	1	U	0.94
78-87-5	1,2-Dichloropropane	0.94	1	U	0.94
108-67-8	1,3,5-Trimethylbenzene	0.94	1	UJ	0.94
541-73-1	1,3-Dichlorobenzene	0.94	1	UJ	0.94
142-28-9	1,3-Dichloropropane	0.94	1	U	0.94
106-46-7	1,4-Dichlorobenzene	0.94	1	UJ	0.94
594-20-7	2,2-Dichloropropane	0.94	1	U	0.94
78-93-3	2-Butanone	0.94	1	UJ	0.94
95-49-8	2-Chlorotoluene	0.94	1	UJ	0.94
591-78-6	2-Hexanone	0.94	1	UJ	0.94
106-43-4	4-Chlorotoluene	0.94	1	UJ	0.94
108-10-1	4-Methyl-2-pentanone	0.94	1	UJ	0.94
67-64-1	Acetone	1.70	1	U	0.94
71-43-2	Benzene	0.94	1	U	0.94
108-86-1	Bromobenzene	0.94	1	UJ	0.94
74-97-5	Bromochloromethane	0.94	1	U	0.94
75-27-4	Bromodichloromethane	0.94	1	U	0.94
75-25-2	Bromoform	0.94	1	UJ	0.94
74-83-9	Bromomethane	1.88	1	U	1.88
75-15-0	Carbon Disulfide	0.94	1	U	0.94
56-23-5	Carbon Tetrachloride	0.94	1	U	0.94
108-90-7	Chlorobenzene	0.94	1	U	0.94
75-00-3	Chloroethane	0.94	1	UJ	0.94
67-66-3	Chloroform	0.94	1	U	0.94
74-87-3	Chloromethane	0.94	1	U	0.94
156-59-2	Cis-1,2-Dichloroethene	0.94	1	U	0.94
10061-01-5	Cis-1,3-Dichloropropene	0.94	1	U	0.94
124-48-1	Dibromochloromethane	0.94	1	U	0.94
74-95-3	Dibromomethane	0.94	1	U	0.94
75-71-8	Dichlorodifluoromethane	1.88	1	U	1.88
60-29-7	Ethyl Ether	0.94	1	U	0.94

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

Project: LCB Sampling — Field ID: TP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 6.007 g
Final Vol: 5 mL

Lab ID #: 2304065-48
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.61%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	0.94	1	U	0.94
87-68-3	Hexachlorobutadiene	0.94	1	UJ	0.94
67-72-1	Hexachloroethane	0.94	1	UJ	0.94
98-82-8	Isopropylbenzene (Cumene)	0.94	1	UJ	0.94
179601-23-1	m,p-Xylene	1.88	1	U	1.88
74-88-4	Methyl Iodide	0.94	1	UJ	0.94
1634-04-4	Methyl t-butyl ether	0.94	1	U	0.94
75-09-2	Methylene Chloride	0.94	1	U	0.94
91-20-3	Naphthalene	0.94	1	UJ	0.94
104-51-8	n-Butylbenzene	0.94	1	UJ	0.94
103-65-1	n-Propylbenzene	0.94	1	UJ	0.94
95-47-6	o-Xylene	0.94	1	U	0.94
76-01-7	Pentachloroethane	0.94	1	UJ	0.94
99-87-6	p-Isopropyltoluene	0.94	1	UJ	0.94
135-98-8	Sec-Butylbenzene	0.94	1	UJ	0.94
100-42-5	Styrene	0.94	1	U	0.94
98-06-6	Tert-Butylbenzene	0.94	1	UJ	0.94
127-18-4	Tetrachloroethene	0.94	1	U	0.94
109-99-9	Tetrahydrofuran	0.94	1	U	0.94
108-88-3	Toluene	0.94	1	U	0.94
156-60-5	Trans-1,2-Dichloroethene	0.94	1	U	0.94
10061-02-6	Trans-1,3-Dichloropropene	0.94	1	U	0.94
110-57-6	Trans-1,4-Dichloro-2-butene	1.88	1	U	1.88
79-01-6	Trichloroethene	0.94	1	U	0.94
75-69-4	Trichlorofluoromethane	0.94	1	U	0.94
75-01-4	Vinyl Chloride	0.94	1	U	0.94

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.2	10.0	112	80-120
17060-07-0	1,2-Dichloroethane-D4	12.0	10.0	120	80-120
540-36-3	1,4-Difluorobenzene	10.4	10.0	104	80-120
460-00-4	*p-Bromofluorobenzene*	*7.34*	*10.0*	*73*	*80-120*
2037-26-5	Toluene-D8	10.8	10.0	108	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — Field ID: TP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.281 g
Final Vol: 5 mL

Lab ID #: 2304065-49
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.79%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.07	1	U	1.07
71-55-6	1,1,1-Trichloroethane	1.07	1	U	1.07
79-34-5	1,1,2,2-Tetrachloroethane	1.07	1	U	1.07
79-00-5	1,1,2-Trichloroethane	1.07	1	U	1.07
76-13-1	1,1,2-Trichlorotrifluoroethane	1.07	1	U	1.07
75-34-3	1,1-Dichloroethane	1.07	1	U	1.07
75-35-4	1,1-Dichloroethene	1.07	1	U	1.07
563-58-6	1,1-Dichloropropene	1.07	1	U	1.07
87-61-6	1,2,3-Trichlorobenzene	1.07	1	U	1.07
96-18-4	1,2,3-Trichloropropane	1.07	1	U	1.07
120-82-1	1,2,4-Trichlorobenzene	1.07	1	U	1.07
95-63-6	1,2,4-Trimethylbenzene	1.07	1	U	1.07
96-12-8	1,2-Dibromo-3-Chloropropane	1.07	1	UJ	1.07
106-93-4	1,2-Dibromoethane	1.07	1	U	1.07
95-50-1	1,2-Dichlorobenzene	1.07	1	U	1.07
107-06-2	1,2-Dichloroethane	1.07	1	U	1.07
78-87-5	1,2-Dichloropropane	1.07	1	U	1.07
108-67-8	1,3,5-Trimethylbenzene	1.07	1	U	1.07
541-73-1	1,3-Dichlorobenzene	1.07	1	U	1.07
142-28-9	1,3-Dichloropropane	1.07	1	U	1.07
106-46-7	1,4-Dichlorobenzene	1.07	1	U	1.07
594-20-7	2,2-Dichloropropane	1.07	1	U	1.07
78-93-3	2-Butanone	1.07	1	UJ	1.07
95-49-8	2-Chlorotoluene	1.07	1	U	1.07
591-78-6	2-Hexanone	1.07	1	UJ	1.07
106-43-4	4-Chlorotoluene	1.07	1	U	1.07
108-10-1	4-Methyl-2-pentanone	1.07	1	UJ	1.07
67-64-1	Acetone	1.07	1	U	1.07
71-43-2	Benzene	1.07	1	U	1.07
108-86-1	Bromobenzene	1.07	1	U	1.07
74-97-5	Bromochloromethane	1.07	1	U	1.07
75-27-4	Bromodichloromethane	1.07	1	U	1.07
75-25-2	Bromoform	1.07	1	U	1.07
74-83-9	Bromomethane	2.13	1	U	2.13
75-15-0	Carbon Disulfide	1.07	1	U	1.07
56-23-5	Carbon Tetrachloride	1.07	1	U	1.07
108-90-7	Chlorobenzene	1.07	1	U	1.07
75-00-3	Chloroethane	1.07	1	UJ	1.07
67-66-3	Chloroform	1.07	1	U	1.07
74-87-3	Chloromethane	1.07	1	U	1.07
156-59-2	Cis-1,2-Dichloroethene	1.07	1	U	1.07
10061-01-5	Cis-1,3-Dichloropropene	1.07	1	U	1.07
124-48-1	Dibromochloromethane	1.07	1	U	1.07
74-95-3	Dibromomethane	1.07	1	U	1.07
75-71-8	Dichlorodifluoromethane	2.13	1	U	2.13
60-29-7	Ethyl Ether	1.07	1	U	1.07

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

Project: LCB Sampling

Field ID: TP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 5.281 g
Final Vol: 5 mL

Lab ID #: 2304065-49
Collected: 4/11/2023
Prep Method: SW5030B
Analysis Method: SW8260D
% Solids: 88.79%

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.07	1	U	1.07
87-68-3	Hexachlorobutadiene	1.07	1	U	1.07
67-72-1	Hexachloroethane	1.07	1	U	1.07
98-82-8	Isopropylbenzene (Cumene)	1.07	1	U	1.07
179601-23-1	m,p-Xylene	2.13	1	U	2.13
74-88-4	Methyl Iodide	1.07	1	UJ	1.07
1634-04-4	Methyl t-butyl ether	1.07	1	U	1.07
75-09-2	Methylene Chloride	1.07	1	U	1.07
91-20-3	Naphthalene	1.07	1	UJ	1.07
104-51-8	n-Butylbenzene	1.07	1	U	1.07
103-65-1	n-Propylbenzene	1.07	1	U	1.07
95-47-6	o-Xylene	1.07	1	U	1.07
76-01-7	Pentachloroethane	1.07	1	U	1.07
99-87-6	p-Isopropyltoluene	1.07	1	U	1.07
135-98-8	Sec-Butylbenzene	1.07	1	U	1.07
100-42-5	Styrene	1.07	1	U	1.07
98-06-6	Tert-Butylbenzene	1.07	1	U	1.07
127-18-4	Tetrachloroethene	1.07	1	U	1.07
109-99-9	Tetrahydrofuran	1.07	1	U	1.07
108-88-3	Toluene	1.07	1	U	1.07
156-60-5	Trans-1,2-Dichloroethene	1.07	1	U	1.07
10061-02-6	Trans-1,3-Dichloropropene	1.07	1	U	1.07
110-57-6	Trans-1,4-Dichloro-2-butene	2.13	1	U	2.13
79-01-6	Trichloroethene	1.07	1	U	1.07
75-69-4	Trichlorofluoromethane	1.07	1	U	1.07
75-01-4	Vinyl Chloride	1.07	1	U	1.07

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	11.1	10.0	111	80-120
17060-07-0	1,2-Dichloroethane-D4	12.0	10.0	120	80-120
540-36-3	1,4-Difluorobenzene	10.4	10.0	104	80-120
460-00-4	*p-Bromofluorobenzene*	*7.79*	*10.0*	*78*	*80-120*
2037-26-5	Toluene-D8	10.4	10.0	104	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BLK1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BLK1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
630-20-6	1,1,1,2-Tetrachloroethane	1.00	U	1.00
71-55-6	1,1,1-Trichloroethane	1.00	U	1.00
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	1.00
79-00-5	1,1,2-Trichloroethane	1.00	U	1.00
76-13-1	1,1,2-Trichlorotrifluoroethane	1.00	U	1.00
75-34-3	1,1-Dichloroethane	1.00	U	1.00
75-35-4	1,1-Dichloroethene	1.00	U	1.00
563-58-6	1,1-Dichloropropene	1.00	U	1.00
87-61-6	1,2,3-Trichlorobenzene	1.00	U	1.00
96-18-4	1,2,3-Trichloropropane	1.00	U	1.00
120-82-1	1,2,4-Trichlorobenzene	1.00	U	1.00
95-63-6	1,2,4-Trimethylbenzene	1.00	U	1.00
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	UJ	1.00
106-93-4	1,2-Dibromoethane	1.00	U	1.00
95-50-1	1,2-Dichlorobenzene	1.00	U	1.00
107-06-2	1,2-Dichloroethane	1.00	U	1.00
78-87-5	1,2-Dichloropropane	1.00	U	1.00
108-67-8	1,3,5-Trimethylbenzene	1.00	U	1.00
541-73-1	1,3-Dichlorobenzene	1.00	U	1.00
142-28-9	1,3-Dichloropropane	1.00	U	1.00
106-46-7	1,4-Dichlorobenzene	1.00	U	1.00
594-20-7	2,2-Dichloropropane	1.00	U	1.00
78-93-3	2-Butanone	1.00	UJ	1.00
95-49-8	2-Chlorotoluene	1.00	U	1.00
591-78-6	2-Hexanone	1.00	UJ	1.00
106-43-4	4-Chlorotoluene	1.00	U	1.00
108-10-1	4-Methyl-2-pentanone	1.00	UJ	1.00
67-64-1	**Acetone**	**1.71**	**J**	**1.00**
71-43-2	Benzene	1.00	U	1.00
108-86-1	Bromobenzene	1.00	U	1.00
74-97-5	Bromochloromethane	1.00	U	1.00
75-27-4	Bromodichloromethane	1.00	U	1.00
75-25-2	Bromoform	1.00	U	1.00
74-83-9	Bromomethane	2.00	U	2.00
75-15-0	Carbon Disulfide	1.00	U	1.00
56-23-5	Carbon Tetrachloride	1.00	U	1.00
108-90-7	Chlorobenzene	1.00	U	1.00
75-00-3	Chloroethane	1.00	UJ	1.00
67-66-3	Chloroform	1.00	U	1.00
74-87-3	Chloromethane	1.00	U	1.00
156-59-2	Cis-1,2-Dichloroethene	1.00	U	1.00
10061-01-5	Cis-1,3-Dichloropropene	1.00	U	1.00
124-48-1	Dibromochloromethane	1.00	U	1.00
74-95-3	Dibromomethane	1.00	U	1.00
75-71-8	Dichlorodifluoromethane	2.00	U	2.00
60-29-7	Ethyl Ether	1.00	U	1.00

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

Project: LCB Sampling — QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BLK1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BLK1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
100-41-4	Ethylbenzene	1.00	U	1.00
87-68-3	Hexachlorobutadiene	1.00	U	1.00
67-72-1	Hexachloroethane	1.00	U	1.00
98-82-8	Isopropylbenzene (Cumene)	1.00	U	1.00
179601-23-1	m,p-Xylene	2.00	U	2.00
74-88-4	Methyl Iodide	1.00	UJ	1.00
1634-04-4	Methyl t-butyl ether	1.00	U	1.00
75-09-2	Methylene Chloride	1.00	U	1.00
91-20-3	Naphthalene	1.00	UJ	1.00
104-51-8	n-Butylbenzene	1.00	U	1.00
103-65-1	n-Propylbenzene	1.00	U	1.00
95-47-6	o-Xylene	1.00	U	1.00
76-01-7	Pentachloroethane	1.00	U	1.00
99-87-6	p-Isopropyltoluene	1.00	U	1.00
135-98-8	Sec-Butylbenzene	1.00	U	1.00
100-42-5	Styrene	1.00	U	1.00
98-06-6	Tert-Butylbenzene	1.00	U	1.00
127-18-4	Tetrachloroethene	1.00	U	1.00
109-99-9	Tetrahydrofuran	1.00	U	1.00
108-88-3	Toluene	1.00	U	1.00
156-60-5	Trans-1,2-Dichloroethene	1.00	U	1.00
10061-02-6	Trans-1,3-Dichloropropene	1.00	U	1.00
110-57-6	Trans-1,4-Dichloro-2-butene	2.00	U	2.00
79-01-6	Trichloroethene	1.00	U	1.00
75-69-4	Trichlorofluoromethane	1.00	U	1.00
75-01-4	Vinyl Chloride	1.00	U	1.00

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	10.8	10.0	108	80-120
17060-07-0	1,2-Dichloroethane-D4	10.4	10.0	104	80-120
540-36-3	1,4-Difluorobenzene	10.3	10.0	103	80-120
460-00-4	p-Bromofluorobenzene	9.14	10.0	91	80-120
2037-26-5	Toluene-D8	10.0	10.0	100	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling — QC Type : LCS

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BS1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BS1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	9.7	10.0	1.00	97	75-125
1,1,1-Trichloroethane	9.4	10.0	1.00	94	75-125
1,1,2,2-Tetrachloroethane	9.4	10.0	1.00	94	75-125
1,1,2-Trichloroethane	9.3	10.0	1.00	93	75-125
1,1,2-Trichlorotrifluoroethane	10.0	10.0	1.00	100	75-125
1,1-Dichloroethane	9.1	10.0	1.00	91	75-125
1,1-Dichloroethene	10.6	10.0	1.00	106	75-125
1,1-Dichloropropene	8.8	10.0	1.00	88	75-125
1,2,3-Trichlorobenzene	8.1	10.0	1.00	81	75-125
1,2,3-Trichloropropane	8.7	10.0	1.00	87	75-125
1,2,4-Trichlorobenzene	8.9	10.0	1.00	89	75-125
1,2,4-Trimethylbenzene	9.0	10.0	1.00	90	75-125
1,2-Dibromo-3-Chloropropane	8.0	10.0	1.00	80	75-125
1,2-Dibromoethane	9.2	10.0	1.00	92	75-125
1,2-Dichlorobenzene	9.4	10.0	1.00	94	75-125
1,2-Dichloroethane	9.4	10.0	1.00	94	75-125
1,2-Dichloropropane	9.0	10.0	1.00	90	75-125
1,3,5-Trimethylbenzene	9.1	10.0	1.00	91	75-125
1,3-Dichlorobenzene	9.6	10.0	1.00	96	75-125
1,3-Dichloropropane	9.0	10.0	1.00	90	75-125
1,4-Dichlorobenzene	9.6	10.0	1.00	96	75-125
2,2-Dichloropropane	9.3	10.0	1.00	93	75-125
2-Butanone	3.9	10.0	1.00	39	60-140
2-Chlorotoluene	9.0	10.0	1.00	90	75-125
2-Hexanone	7.3	10.0	1.00	73	60-140
4-Chlorotoluene	9.4	10.0	1.00	94	60-140
4-Methyl-2-pentanone	7.6	10.0	1.00	76	60-140
Acetone	9.8	10.0	1.00	98	60-140
Benzene	8.9	10.0	1.00	89	75-125
Bromobenzene	9.2	10.0	1.00	92	75-125
Bromochloromethane	9.5	10.0	1.00	95	75-125
Bromodichloromethane	9.5	10.0	1.00	95	75-125
Bromoform	8.7	10.0	1.00	87	75-125
Bromomethane	9.1	10.0	2.00	91	60-140
Carbon Disulfide	9.4	10.0	1.00	94	75-125
Carbon Tetrachloride	9.6	10.0	1.00	96	75-125
Chlorobenzene	9.5	10.0	1.00	95	75-125
Chloroethane	7.4	10.0	1.00	74	75-125
Chloroform	9.8	10.0	1.00	98	75-125
Chloromethane	9.0	10.0	1.00	90	60-140
Cis-1,2-Dichloroethene	9.3	10.0	1.00	93	75-125
Cis-1,3-Dichloropropene	8.2	10.0	1.00	82	75-125
Dibromochloromethane	9.6	10.0	1.00	96	75-125
Dibromomethane	9.3	10.0	1.00	93	75-125
Dichlorodifluoromethane	6.6	10.0	2.00	66	60-140
Ethyl Ether	8.8	10.0	1.00	88	75-125

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

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BS1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BS1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
Ethylbenzene	9.5	10.0	1.00	95	75-125
Hexachlorobutadiene	9.7	10.0	1.00	97	75-125
Hexachloroethane	9.5	10.0	1.00	95	75-125
Isopropylbenzene (Cumene)	9.1	10.0	1.00	91	75-125
m,p-Xylene	19.8	20.0	2.00	99	75-125
Methyl Iodide	3.0	10.0	1.00	30	75-125
Methyl t-butyl ether	8.0	10.0	1.00	80	75-125
Methylene Chloride	10.8	10.0	1.00	108	60-140
Naphthalene	8.1	10.0	1.00	81	75-125
n-Butylbenzene	9.8	10.0	1.00	98	75-125
n-Propylbenzene	9.1	10.0	1.00	91	75-125
o-Xylene	9.3	10.0	1.00	93	75-125
Pentachloroethane	9.4	10.0	1.00	94	75-125
p-Isopropyltoluene	9.3	10.0	1.00	93	75-125
Styrene	9.4	10.0	1.00	94	75-125
Tert-Butylbenzene	8.9	10.0	1.00	89	75-125
Tetrachloroethene	10.0	10.0	1.00	100	75-125
Tetrahydrofuran	9.2	10.0	1.00	92	75-125
Toluene	9.4	10.0	1.00	94	75-125
Trans-1,2-Dichloroethene	9.6	10.0	1.00	96	75-125
Trans-1,3-Dichloropropene	8.2	10.0	1.00	82	75-125
Trans-1,4-Dichloro-2-butene	8.3	10.0	2.00	83	75-125
Trichloroethene	9.4	10.0	1.00	94	75-125
Trichlorofluoromethane	10.7	10.0	1.00	107	75-125
Vinyl Chloride	8.2	10.0	1.00	82	60-140

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	9.60	10.0	96	80-120
17060-07-0	1,2-Dichloroethane-D4	10.4	10.0	104	80-120
540-36-3	1,4-Difluorobenzene	9.99	10.0	100	80-120
460-00-4	p-Bromofluorobenzene	10.2	10.0	102	80-120
2037-26-5	Toluene-D8	9.88	10.0	99	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

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

Project: LCB Sampling

QC Type : LCS Dup

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BSD1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BSD1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
1,1,1,2-Tetrachloroethane	10.3	10.0	103	6	75-125	30
1,1,1-Trichloroethane	9.9	10.0	99	5	75-125	30
1,1,2,2-Tetrachloroethane	10.0	10.0	100	7	75-125	30
1,1,2-Trichloroethane	10.0	10.0	100	8	75-125	30
1,1,2-Trichlorotrifluoroethane	9.8	10.0	98	2	75-125	30
1,1-Dichloroethane	10.0	10.0	100	9	75-125	30
1,1-Dichloroethene	10.9	10.0	109	3	75-125	30
1,1-Dichloropropene	9.8	10.0	98	11	75-125	30
1,2,3-Trichlorobenzene	9.0	10.0	90	11	75-125	30
1,2,3-Trichloropropane	8.4	10.0	84	3	75-125	30
1,2,4-Trichlorobenzene	9.7	10.0	97	8	75-125	30
1,2,4-Trimethylbenzene	9.7	10.0	97	7	75-125	30
1,2-Dibromo-3-Chloropropane	8.5	10.0	85	6	75-125	30
1,2-Dibromoethane	10.0	10.0	100	9	75-125	30
1,2-Dichlorobenzene	10.0	10.0	100	6	75-125	30
1,2-Dichloroethane	10.4	10.0	104	9	75-125	30
1,2-Dichloropropane	9.7	10.0	97	8	75-125	30
1,3,5-Trimethylbenzene	9.5	10.0	95	5	75-125	30
1,3-Dichlorobenzene	10.1	10.0	101	5	75-125	30
1,3-Dichloropropane	9.9	10.0	99	10	75-125	30
1,4-Dichlorobenzene	10.0	10.0	100	3	75-125	30
2,2-Dichloropropane	10.1	10.0	101	9	75-125	30
2-Butanone	9.1	10.0	91	81	60-140	40
2-Chlorotoluene	9.3	10.0	93	3	75-125	30
2-Hexanone	8.4	10.0	84	13	60-140	40
4-Chlorotoluene	9.9	10.0	99	5	60-140	40
4-Methyl-2-pentanone	8.9	10.0	89	16	60-140	40
Acetone	10.3	10.0	103	5	60-140	40
Benzene	9.6	10.0	96	7	75-125	30
Bromobenzene	10.1	10.0	101	9	75-125	30
Bromochloromethane	10.4	10.0	104	9	75-125	40
Bromodichloromethane	10.2	10.0	102	7	75-125	30
Bromoform	9.5	10.0	95	10	75-125	30
Bromomethane	10.1	10.0	101	11	60-140	40
Carbon Disulfide	9.5	10.0	95	1	75-125	30
Carbon Tetrachloride	9.9	10.0	99	4	75-125	30
Chlorobenzene	10.1	10.0	101	6	75-125	30
Chloroethane	7.7	10.0	77	5	75-125	30
Chloroform	10.5	10.0	105	7	75-125	30
Chloromethane	9.5	10.0	95	6	60-140	40
Cis-1,2-Dichloroethene	10.3	10.0	103	10	75-125	30
Cis-1,3-Dichloropropene	9.1	10.0	91	11	75-125	30
Dibromochloromethane	10.5	10.0	105	9	75-125	30
Dibromomethane	9.7	10.0	97	4	75-125	30
Dichlorodifluoromethane	6.9	10.0	69	4	60-140	40
Ethyl Ether	9.7	10.0	97	10	75-125	30

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

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 5 g
Final Vol: 5 mL

Lab ID #: B23D122-BSD1
Prep Method: SW5030B
Analysis Method: SW8260D
Source Field ID: B23D122-BSD1

Batch ID: B23D122
Prepared: 4/20/2023
Analyzed: 4/20/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
Ethylbenzene	10.1	10.0	101	6	75-125	30
Hexachlorobutadiene	10.0	10.0	100	3	75-125	30
Hexachloroethane	10.0	10.0	100	4	75-125	30
Isopropylbenzene (Cumene)	9.7	10.0	97	7	75-125	30
m,p-Xylene	20.6	20.0	103	4	75-125	40
Methyl Iodide	3.6	10.0	36	19	75-125	30
Methyl t-butyl ether	9.3	10.0	93	16	75-125	30
Methylene Chloride	11.4	10.0	114	5	60-140	40
Naphthalene	9.3	10.0	93	14	75-125	30
n-Butylbenzene	10.2	10.0	102	4	75-125	30
n-Propylbenzene	9.6	10.0	96	6	75-125	30
o-Xylene	10.0	10.0	100	7	75-125	30
Pentachloroethane	10.1	10.0	101	7	75-125	30
p-Isopropyltoluene	9.8	10.0	98	4	75-125	30
Styrene	10.0	10.0	100	6	75-125	30
Tert-Butylbenzene	9.6	10.0	96	7	75-125	30
Tetrachloroethene	10.4	10.0	104	4	75-125	30
Tetrahydrofuran	8.5	10.0	85	8	75-125	30
Toluene	9.8	10.0	98	5	75-125	30
Trans-1,2-Dichloroethene	9.9	10.0	99	3	75-125	30
Trans-1,3-Dichloropropene	9.4	10.0	94	14	75-125	30
Trans-1,4-Dichloro-2-butene	9.7	10.0	97	15	75-125	30
Trichloroethene	10.0	10.0	100	7	75-125	30
Trichlorofluoromethane	11.0	10.0	110	2	75-125	30
Vinyl Chloride	9.0	10.0	90	9	60-140	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
2199-69-1	1,2-Dichlorobenzene-D4	9.77	10.0	98	80-120
17060-07-0	1,2-Dichloroethane-D4	10.5	10.0	105	80-120
540-36-3	1,4-Difluorobenzene	9.93	10.0	99	80-120
460-00-4	p-Bromofluorobenzene	10.2	10.0	102	80-120
2037-26-5	Toluene-D8	9.88	10.0	99	80-120

Authorized by: Dolores Montgomery **Release Date:** 5/9/2023

Appendix A
Sample Correlation Table

Batch ID: B23D113 **Prep Method:** SW5030B

Prepared: 4/19/2023 **Analysis Method:** SW8260D

Field ID	MEL ID
GG-SA1	2304065-18
GG-SA2	2304065-19
GRP-SA1	2304065-20
GRP-SA2	2304065-21
EP-SA1	2304065-22
EP-SA2	2304065-23
PSV-SA1	2304065-24
PSV-SA2	2304065-25
SLS-SA1	2304065-26
SLS-SA2	2304065-27
AT-SA1	2304065-28
AT-SA2	2304065-29
W-SA1	2304065-30
W-SA2	2304065-31
W-SA2(D)	2304065-32
HE-SA1	2304065-33
Method Blank	B23D113-BLK1
LCS	B23D113-BS1
LCS Dup	B23D113-BSD1

Appendix A
Sample Correlation Table

Batch ID: B23D122 **Prep Method:** SW5030B

Prepared: 4/20/2023 **Analysis Method:** SW8260D

Field ID	MEL ID
HE-SA2	2304065-34
HE-SA2(D)	2304065-35
T-SA1	2304065-36
T-SA2	2304065-37
OG-SA1	2304065-38
OG-SA2	2304065-39
B-SA1	2304065-40
B-SA2	2304065-41
KJ-SA1	2304065-42
KJ-SA2	2304065-43
KJ-SA2(D)	2304065-44
BM-SA1	2304065-45
BM-SA2	2304065-46
BM-SA2(D)	2304065-47
TP-SA1	2304065-48
TP-SA2	2304065-49
Method Blank	B23D122-BLK1
LCS	B23D122-BS1
LCS Dup	B23D122-BSD1

Appendix B
Manual Qualification Table

WO: 2304065 **Analysis:** VOA

Presence or absence of the analyte cannot be verified; ISTD recovery severely exceeded QC limits.

1,1,1,2-Tetrachloroethane REJ: 2304065-39,
1,1,1-Trichloroethane REJ: 2304065-39,
1,1,2,2-Tetrachloroethane REJ: 2304065-39,
1,1,2-Trichloroethane REJ: 2304065-39,
1,1,2-Trichlorotrifluoroethane REJ: 2304065-39,
1,1-Dichloroethane REJ: 2304065-39,
1,1-Dichloroethene REJ: 2304065-39,
1,1-Dichloropropene REJ: 2304065-39,
1,2,3-Trichlorobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2,3-Trichloropropane REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2,4-Trichlorobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2,4-Trimethylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2-Dibromo-3-Chloropropane REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2-Dibromoethane REJ: 2304065-39,
1,2-Dichlorobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,2-Dichlorobenzene-D4 REJ: 2304065-39,
1,2-Dichloroethane REJ: 2304065-39,
1,2-Dichloroethane-D4 REJ: 2304065-39,
1,2-Dichloropropane REJ: 2304065-39,
1,3,5-Trimethylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,3-Dichlorobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,3-Dichloropropane REJ: 2304065-39,
1,4-Dichlorobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
1,4-Dichlorobenzene-D4 REJ: 2304065-39,
1,4-Difluorobenzene REJ: 2304065-39,
2,2-Dichloropropane REJ: 2304065-39,
2-Butanone REJ: 2304065-39,
2-Chlorotoluene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
2-Hexanone REJ: 2304065-39,
4-Chlorotoluene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
4-Methyl-2-pentanone REJ: 2304065-39,
Acetone REJ: 2304065-39,
Benzene REJ: 2304065-39,
Bromobenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Bromochloromethane REJ: 2304065-39,
Bromodichloromethane REJ: 2304065-39,
Bromoform REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Bromomethane REJ: 2304065-39,
Carbon Disulfide REJ: 2304065-39,
Carbon Tetrachloride REJ: 2304065-39,
Chlorobenzene REJ: 2304065-39,
Chlorobenzene-D5 REJ: 2304065-39,
Chloroethane REJ: 2304065-39,
Chloroform REJ: 2304065-39,
Chloromethane REJ: 2304065-39,

Appendix B
Manual Qualification Table

WO: 2304065 **Analysis:** VOA

Cis-1,2-Dichloroethene REJ: 2304065-39,
Cis-1,3-Dichloropropene REJ: 2304065-39,
Dibromochloromethane REJ: 2304065-39,
Dibromomethane REJ: 2304065-39,
Dichlorodifluoromethane REJ: 2304065-39,
Ethyl Ether REJ: 2304065-39,
Ethylbenzene REJ: 2304065-39,
Fluorobenzene REJ: 2304065-39,
Hexachlorobutadiene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Hexachloroethane REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Isopropylbenzene (Cumene) REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
m,p-Xylene REJ: 2304065-39,
Methyl Iodide REJ: 2304065-39,
Methyl t-butyl ether REJ: 2304065-39,
Methylene Chloride REJ: 2304065-39,
Naphthalene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
n-Butylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
n-Propylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
o-Xylene REJ: 2304065-39,
p-Bromofluorobenzene REJ: 2304065-39,
Pentachloroethane REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
p-Isopropyltoluene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Sec-Butylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Styrene REJ: 2304065-39,
Tert-Butylbenzene REJ: 2304065-29, 2304065-34, 2304065-39, 2304065-47,
Tetrachloroethene REJ: 2304065-39,
Tetrahydrofuran REJ: 2304065-39,
Toluene REJ: 2304065-39,
Toluene-D8 REJ: 2304065-39,
Trans-1,2-Dichloroethene REJ: 2304065-39,
Trans-1,3-Dichloropropene REJ: 2304065-39,
Trans-1,4-Dichloro-2-butene REJ: 2304065-29, 2304065-39,
Trichloroethene REJ: 2304065-39,
Trichlorofluoromethane REJ: 2304065-39,
Vinyl Chloride REJ: 2304065-39,

Reported result is estimated; CCV exceeded QC limits.

Acetone J: B23D122-BLK1,
Methylene Chloride J: 2304065-42, 2304065-44, 2304065-45,

Analyte was not detected at or above the estimated MRL; ICAL linearity exceeded QC limits.

Chloroethane UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-29, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-34, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-47, 2304065-48, 2304065-49, B23D113-BLK1, B23D122-BLK1,

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

Appendix B
Manual Qualification Table

WO: QC **Analysis:** VOA

2-Butanone UJ: 2304065-34, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-47, 2304065-48, 2304065-49, B23D122-BLK1,

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

1,2-Dibromo-3-Chloropropane UJ: 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48, 2304065-49, B23D122-BLK1,

2-Hexanone UJ: 2304065-34, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-47, 2304065-48, 2304065-49, B23D122-BLK1,

4-Methyl-2-pentanone UJ: 2304065-34, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-47, 2304065-48, 2304065-49, B23D122-BLK1,

Methyl Iodide UJ: 2304065-34, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-47, 2304065-48, 2304065-49, B23D122-BLK1,

Naphthalene UJ: 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-41, 2304065-42, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48, 2304065-49, B23D122-BLK1,

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

1,1,1,2-Tetrachloroethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,1,1-Trichloroethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,1,2,2-Tetrachloroethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,1,2-Trichloroethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,1,2-Trichlorotrifluoroethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

1,1-Dichloroethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

1,1-Dichloroethene UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

1,1-Dichloropropene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,2,3-Trichlorobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,2,3-Trichloropropane UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

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WO: 2304065 **Analysis:** VOA

1,2,4-Trichlorobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,2,4-Trimethylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,2-Dibromo-3-Chloropropane UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33,

1,2-Dibromoethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,2-Dichlorobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,2-Dichloroethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

1,2-Dichloropropane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,3,5-Trimethylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,3-Dichlorobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

1,3-Dichloropropane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

1,4-Dichlorobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

2,2-Dichloropropane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

2-Butanone UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33,

2-Chlorotoluene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

2-Hexanone UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33,

4-Chlorotoluene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

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WO: 2304065 **Analysis:** VOA

4-Methyl-2-pentanone UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33,
Acetone UJ: 2304065-29, 2304065-34, 2304065-46, 2304065-47,
Benzene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Bromobenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,
Bromochloromethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Bromodichloromethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Bromoform UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,
Bromomethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Carbon Disulfide UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Carbon Tetrachloride UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Chlorobenzene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Chloroform UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Chloromethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Cis-1,2-Dichloroethene UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Cis-1,3-Dichloropropene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Dibromochloromethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Dibromomethane UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Dichlorodifluoromethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Ethyl Ether UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,
Ethylbenzene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,
Hexachlorobutadiene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

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Manual Qualification Table

WO: 2304065 **Analysis:** VOA

Hexachloroethane UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

Isopropylbenzene (Cumene) UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

m,p-Xylene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Methyl Iodide UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33,

Methyl t-butyl ether UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

Methylene Chloride UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

Naphthalene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33,

n-Butylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

n-Propylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

o-Xylene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Pentachloroethane UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

p-Isopropyltoluene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

Sec-Butylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

Styrene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Tert-Butylbenzene UJ: 2304065-18, 2304065-19, 2304065-20, 2304065-21, 2304065-22, 2304065-23, 2304065-24, 2304065-25, 2304065-26, 2304065-27, 2304065-28, 2304065-30, 2304065-31, 2304065-32, 2304065-33, 2304065-35, 2304065-36, 2304065-37, 2304065-38, 2304065-40, 2304065-43, 2304065-44, 2304065-45, 2304065-46, 2304065-48,

Tetrachloroethene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Appendix B
Manual Qualification Table

WO: 2304065 **Analysis:** VOA

Tetrahydrofuran UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

Toluene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Trans-1,2-Dichloroethene UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

Trans-1,3-Dichloropropene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Trans-1,4-Dichloro-2-butene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Trichloroethene UJ: 2304065-21, 2304065-26, 2304065-28, 2304065-29, 2304065-31, 2304065-33, 2304065-34, 2304065-36, 2304065-46, 2304065-47,

Trichlorofluoromethane UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

Vinyl Chloride UJ: 2304065-21, 2304065-26, 2304065-29, 2304065-33, 2304065-34, 2304065-46, 2304065-47,

MRL raised due to background; analyte was not detected at or above the estimated reported result.

Acetone UJ: 2304065-21, 2304065-26, 2304065-33,

MRL raised due to background; analyte was not detected at or above the reported result.

Acetone U: 2304065-18, 2304065-20, 2304065-24, 2304065-28, 2304065-31, 2304065-32, 2304065-35, 2304065-36, 2304065-38, 2304065-40, 2304065-41, 2304065-48,

Appendix C
Data Qualifier Definitions

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

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception
2304065-18	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-18	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-19	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-19	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-20	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-20	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-20	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-21	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-21	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-21	surr: Toluene-D8	Exceeds upper control limit
2304065-21	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-21	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-21	istd: Fluorobenzene	Exceeds lower control limit
2304065-22	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-22	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-23	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-23	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-24	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-24	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-24	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-25	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-25	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-26	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-26	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-26	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-26	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-26	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-26	istd: Fluorobenzene	Exceeds lower control limit
2304065-27	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-27	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-27	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-28	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-28	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-28	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-28	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-29	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-29	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-29	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-29	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-29	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-29	istd: Fluorobenzene	Exceeds lower control limit
2304065-30	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-30	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-31	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-31	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-31	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-31	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-32	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception
2304065-32	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-32	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-33	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-33	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-33	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-33	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-33	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-33	istd: Fluorobenzene	Exceeds lower control limit
2304065-34	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-34	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-34	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-34	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-34	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-34	istd: Fluorobenzene	Exceeds lower control limit
2304065-35	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-35	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-35	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-35	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-36	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-36	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-36	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-36	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-36	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-37	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-37	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-38	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-38	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-38	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-39	surr: 1,2-Dichlorobenzene-D4	Exceeds lower control limit
2304065-39	surr: 1,2-Dichloroethane-D4	Exceeds lower control limit
2304065-39	surr: 1,4-Difluorobenzene	Exceeds lower control limit
2304065-39	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-39	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-39	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-39	istd: Fluorobenzene	Exceeds lower control limit
2304065-40	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-40	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-42	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-43	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-43	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-43	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-43	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-44	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-44	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-45	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-45	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-46	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-46	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception
2304065-46	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-46	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-46	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-46	istd: Fluorobenzene	Exceeds lower control limit
2304065-47	surr: 1,2-Dichlorobenzene-D4	Exceeds upper control limit
2304065-47	surr: 1,2-Dichloroethane-D4	Exceeds upper control limit
2304065-47	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-47	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-47	istd: Chlorobenzene-D5	Exceeds lower control limit
2304065-47	istd: Fluorobenzene	Exceeds lower control limit
2304065-48	surr: p-Bromofluorobenzene	Exceeds lower control limit
2304065-48	istd: 1,4-Dichlorobenzene-D4	Exceeds lower control limit
2304065-49	surr: p-Bromofluorobenzene	Exceeds lower control limit
B23D113-BS1	Chloroethane	Exceeds lower control limit
B23D113-BSD1	Chloroethane	Exceeds lower control limit
B23D122-BLK1	Acetone	Blank > 1/2 MRL
B23D122-BS1	2-Butanone	Exceeds lower control limit
B23D122-BS1	Chloroethane	Exceeds lower control limit
B23D122-BS1	Methyl Iodide	Exceeds lower control limit
B23D122-BSD1	2-Butanone	Exceeds RPD control limit
B23D122-BSD1	Methyl Iodide	Exceeds lower control limit
S231801-CCV1	Acetone	Exceeds upper control limit
S231801-CCV1	Chloroethane	Exceeds lower control limit
S231801-CCV1	Tetrahydrofuran	Exceeds upper control limit
S231802-CCV1	1,2-Dibromo-3-Chloropropane	Exceeds lower control limit
S231802-CCV1	2-Hexanone	Exceeds lower control limit
S231802-CCV1	4-Methyl-2-pentanone	Exceeds lower control limit
S231802-CCV1	Acetone	Exceeds upper control limit
S231802-CCV1	Methyl Iodide	Exceeds lower control limit
S231802-CCV1	Methylene Chloride	Exceeds upper control limit
S231802-CCV1	Naphthalene	Exceeds lower control limit

QC Exceptions determined using unrounded QC results but are reported as integers throughout this analytical report.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D1801 **Analysis:** VOA

LabNumber	Analyte	QC Exception
	Chloroethane	Exceeds linearity control limit
S231607-CAL2	Chloroethane	Exceeds upper control limit
S231607-ICV1	Chloroethane	Exceeds lower control limit

Appendix E

Polyaromatic Hydrocarbons (PAH) Analytical Results

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

Case Narrative

May 2, 2023

To: Caron, Rachel

Project: LCB Sampling

Work Order: 2304065

Subject: Semivolatile Organics by GC/MS

From: Karin Bailey

Sample Receipt

Enclosed are the PAH results for the samples received by MEL on April 12, 2023. All samples were received in acceptable condition unless noted in Analyst Comments. All samples were prepared and analyzed within holding times unless noted in Analyst Comments.

Analytical Methods

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

- extracted following a modification of method SW3541.
- analyzed following a modification of method SW8270E.

Analyst Comments

None noted.

Sample Qualification

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

Sample Verification

All analyses met QC acceptance criteria except as noted in Appendix D. All analytes met linearity requirements unless noted in Appendix E.

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: KJ-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.002 g
Final Vol: 1 mL

Lab ID #: 2304065-01
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 79.57%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.7	1	U	15.7
91-58-7	2-Chloronaphthalene	15.7	1	U	15.7
91-57-6	2-Methylnaphthalene	15.7	1	U	15.7
83-32-9	Acenaphthene	15.7	1	U	15.7
208-96-8	Acenaphthylene	15.7	1	U	15.7
120-12-7	Anthracene	15.7	1	U	15.7
56-55-3	Benz[a]anthracene	15.7	1	U	15.7
50-32-8	Benzo(a)pyrene	15.7	1	U	15.7
205-99-2	Benzo(b)fluoranthene	15.7	1	U	15.7
191-24-2	Benzo(ghi)perylene	15.7	1	U	15.7
207-08-9	Benzo(k)fluoranthene	15.7	1	U	15.7
86-74-8	Carbazole	15.7	1	U	15.7
218-01-9	Chrysene	15.7	1	U	15.7
53-70-3	Dibenzo(a,h)anthracene	15.7	1	U	15.7
132-64-9	Dibenzofuran	15.7	1	U	15.7
206-44-0	Fluoranthene	15.7	1	U	15.7
86-73-7	Fluorene	15.7	1	U	15.7
193-39-5	Indeno(1,2,3-cd)pyrene	15.7	1	U	15.7
91-20-3	Naphthalene	15.7	1	U	15.7
85-01-8	Phenanthrene	15.7	1	U	15.7
129-00-0	Pyrene	15.7	1	U	15.7
483-65-8	Retene	15.7	1	U	15.7

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	491	503	98	30-115
93951-97-4	Acenaphthylene-D8	517	503	103	50-150
1719-06-8	Anthracene-D10	513	503	102	50-150
63466-71-7	Benzo(a)pyrene-D12	499	503	99	50-150
81103-79-9	Fluorene-D10	461	503	92	50-150
1718-52-1	Pyrene-D10	465	503	92	50-150
1718-51-0	Terphenyl-D14	506	503	101	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: KJ-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.051 g
Final Vol: 1 mL

Lab ID #: 2304065-02
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 78.46%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.9	1	U	15.9
91-58-7	2-Chloronaphthalene	15.9	1	U	15.9
91-57-6	2-Methylnaphthalene	15.9	1	U	15.9
83-32-9	Acenaphthene	15.9	1	U	15.9
208-96-8	Acenaphthylene	15.9	1	U	15.9
120-12-7	Anthracene	15.9	1	U	15.9
56-55-3	Benz[a]anthracene	15.9	1	U	15.9
50-32-8	Benzo(a)pyrene	15.9	1	U	15.9
205-99-2	Benzo(b)fluoranthene	15.9	1	U	15.9
191-24-2	Benzo(ghi)perylene	15.9	1	U	15.9
207-08-9	Benzo(k)fluoranthene	15.9	1	U	15.9
86-74-8	Carbazole	15.9	1	U	15.9
218-01-9	Chrysene	15.9	1	U	15.9
53-70-3	Dibenzo(a,h)anthracene	15.9	1	U	15.9
132-64-9	Dibenzofuran	15.9	1	U	15.9
206-44-0	Fluoranthene	15.9	1	U	15.9
86-73-7	Fluorene	15.9	1	U	15.9
193-39-5	Indeno(1,2,3-cd)pyrene	15.9	1	U	15.9
91-20-3	Naphthalene	15.9	1	U	15.9
85-01-8	Phenanthrene	15.9	1	U	15.9
129-00-0	Pyrene	15.9	1	U	15.9
483-65-8	Retene	15.9	1	U	15.9

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	493	509	97	30-115
93951-97-4	Acenaphthylene-D8	523	509	103	50-150
1719-06-8	Anthracene-D10	518	509	102	50-150
63466-71-7	Benzo(a)pyrene-D12	530	509	104	50-150
81103-79-9	Fluorene-D10	468	509	92	50-150
1718-52-1	Pyrene-D10	496	509	98	50-150
1718-51-0	Terphenyl-D14	531	509	104	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: HE-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.466 g
Final Vol: 1 mL

Lab ID #: 2304065-04
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 85.35%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.3	1	U	14.3
91-58-7	2-Chloronaphthalene	14.3	1	U	14.3
91-57-6	2-Methylnaphthalene	14.3	1	U	14.3
83-32-9	Acenaphthene	14.3	1	U	14.3
208-96-8	Acenaphthylene	14.3	1	U	14.3
120-12-7	Anthracene	14.3	1	U	14.3
56-55-3	Benz[a]anthracene	14.3	1	U	14.3
50-32-8	Benzo(a)pyrene	14.3	1	U	14.3
205-99-2	Benzo(b)fluoranthene	14.3	1	U	14.3
191-24-2	Benzo(ghi)perylene	14.3	1	U	14.3
207-08-9	Benzo(k)fluoranthene	14.3	1	U	14.3
86-74-8	Carbazole	14.3	1	U	14.3
218-01-9	Chrysene	14.3	1	U	14.3
53-70-3	Dibenzo(a,h)anthracene	14.3	1	U	14.3
132-64-9	Dibenzofuran	14.3	1	U	14.3
206-44-0	**Fluoranthene**	**5.64**	1	**J**	**14.3**
86-73-7	Fluorene	14.3	1	U	14.3
193-39-5	Indeno(1,2,3-cd)pyrene	14.3	1	U	14.3
91-20-3	Naphthalene	14.3	1	U	14.3
85-01-8	Phenanthrene	14.3	1	U	14.3
129-00-0	Pyrene	14.3	1	U	14.3
483-65-8	Retene	14.3	1	U	14.3

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	443	458	97	30-115
93951-97-4	Acenaphthylene-D8	476	458	104	50-150
1719-06-8	Anthracene-D10	467	458	102	50-150
63466-71-7	Benzo(a)pyrene-D12	477	458	104	50-150
81103-79-9	Fluorene-D10	416	458	91	50-150
1718-52-1	Pyrene-D10	439	458	96	50-150
1718-51-0	Terphenyl-D14	469	458	102	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: HE-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.136 g
Final Vol: 1 mL

Lab ID #: 2304065-05
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 86.18%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.4	1	U	14.4
91-58-7	2-Chloronaphthalene	14.4	1	U	14.4
91-57-6	2-Methylnaphthalene	14.4	1	U	14.4
83-32-9	Acenaphthene	14.4	1	U	14.4
208-96-8	Acenaphthylene	14.4	1	U	14.4
120-12-7	Anthracene	14.4	1	U	14.4
56-55-3	Benz[a]anthracene	14.4	1	U	14.4
50-32-8	Benzo(a)pyrene	14.4	1	U	14.4
205-99-2	Benzo(b)fluoranthene	14.4	1	U	14.4
191-24-2	Benzo(ghi)perylene	14.4	1	U	14.4
207-08-9	Benzo(k)fluoranthene	14.4	1	U	14.4
86-74-8	Carbazole	14.4	1	U	14.4
218-01-9	Chrysene	14.4	1	U	14.4
53-70-3	Dibenzo(a,h)anthracene	14.4	1	U	14.4
132-64-9	Dibenzofuran	14.4	1	U	14.4
206-44-0	Fluoranthene	14.4	1	U	14.4
86-73-7	Fluorene	14.4	1	U	14.4
193-39-5	Indeno(1,2,3-cd)pyrene	14.4	1	U	14.4
91-20-3	Naphthalene	14.4	1	U	14.4
85-01-8	Phenanthrene	14.4	1	U	14.4
129-00-0	Pyrene	14.4	1	U	14.4
483-65-8	Retene	14.4	1	U	14.4

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	448	461	97	30-115
93951-97-4	Acenaphthylene-D8	482	461	105	50-150
1719-06-8	Anthracene-D10	474	461	103	50-150
63466-71-7	Benzo(a)pyrene-D12	504	461	109	50-150
81103-79-9	Fluorene-D10	419	461	91	50-150
1718-52-1	Pyrene-D10	459	461	99	50-150
1718-51-0	Terphenyl-D14	485	461	105	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: B-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.392 g
Final Vol: 1 mL

Lab ID #: 2304065-07
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 80.85%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.2	1	U	15.2
91-58-7	2-Chloronaphthalene	15.2	1	U	15.2
91-57-6	2-Methylnaphthalene	15.2	1	U	15.2
83-32-9	Acenaphthene	15.2	1	U	15.2
208-96-8	Acenaphthylene	15.2	1	U	15.2
120-12-7	Anthracene	15.2	1	U	15.2
56-55-3	Benz[a]anthracene	15.2	1	U	15.2
50-32-8	Benzo(a)pyrene	15.2	1	U	15.2
205-99-2	Benzo(b)fluoranthene	15.2	1	U	15.2
191-24-2	Benzo(ghi)perylene	15.2	1	U	15.2
207-08-9	Benzo(k)fluoranthene	15.2	1	U	15.2
86-74-8	Carbazole	15.2	1	U	15.2
218-01-9	Chrysene	15.2	1	U	15.2
53-70-3	Dibenzo(a,h)anthracene	15.2	1	U	15.2
132-64-9	Dibenzofuran	15.2	1	U	15.2
206-44-0	Fluoranthene	15.2	1	U	15.2
86-73-7	Fluorene	15.2	1	U	15.2
193-39-5	Indeno(1,2,3-cd)pyrene	15.2	1	U	15.2
91-20-3	Naphthalene	15.2	1	U	15.2
85-01-8	Phenanthrene	15.2	1	U	15.2
129-00-0	Pyrene	15.2	1	U	15.2
483-65-8	Retene	15.2	1	U	15.2

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	468	485	97	30-115
93951-97-4	Acenaphthylene-D8	507	485	105	50-150
1719-06-8	Anthracene-D10	487	485	100	50-150
63466-71-7	Benzo(a)pyrene-D12	510	485	105	50-150
81103-79-9	Fluorene-D10	436	485	90	50-150
1718-52-1	Pyrene-D10	452	485	93	50-150
1718-51-0	Terphenyl-D14	486	485	100	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: B-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.048 g
Final Vol: 1 mL

Lab ID #: 2304065-08
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 78.92%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.8	1	U	15.8
91-58-7	2-Chloronaphthalene	15.8	1	U	15.8
91-57-6	2-Methylnaphthalene	15.8	1	U	15.8
83-32-9	Acenaphthene	15.8	1	U	15.8
208-96-8	Acenaphthylene	15.8	1	U	15.8
120-12-7	Anthracene	15.8	1	U	15.8
56-55-3	Benz[a]anthracene	15.8	1	U	15.8
50-32-8	Benzo(a)pyrene	15.8	1	U	15.8
205-99-2	Benzo(b)fluoranthene	15.8	1	U	15.8
191-24-2	Benzo(ghi)perylene	15.8	1	U	15.8
207-08-9	Benzo(k)fluoranthene	15.8	1	U	15.8
86-74-8	Carbazole	15.8	1	U	15.8
218-01-9	Chrysene	15.8	1	U	15.8
53-70-3	Dibenzo(a,h)anthracene	15.8	1	U	15.8
132-64-9	Dibenzofuran	15.8	1	U	15.8
206-44-0	Fluoranthene	15.8	1	U	15.8
86-73-7	Fluorene	15.8	1	U	15.8
193-39-5	Indeno(1,2,3-cd)pyrene	15.8	1	U	15.8
91-20-3	Naphthalene	15.8	1	U	15.8
85-01-8	Phenanthrene	15.8	1	U	15.8
129-00-0	Pyrene	15.8	1	U	15.8
483-65-8	Retene	15.8	1	U	15.8

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	478	506	95	30-115
93951-97-4	Acenaphthylene-D8	516	506	102	50-150
1719-06-8	Anthracene-D10	499	506	99	50-150
63466-71-7	Benzo(a)pyrene-D12	514	506	102	50-150
81103-79-9	Fluorene-D10	441	506	87	50-150
1718-52-1	Pyrene-D10	467	506	92	50-150
1718-51-0	Terphenyl-D14	494	506	98	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: OG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.274 g
Final Vol: 1 mL

Lab ID #: 2304065-09
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 88.19%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.0	1	U	14.0
91-58-7	2-Chloronaphthalene	14.0	1	U	14.0
91-57-6	2-Methylnaphthalene	14.0	1	U	14.0
83-32-9	Acenaphthene	14.0	1	U	14.0
208-96-8	Acenaphthylene	14.0	1	U	14.0
120-12-7	Anthracene	14.0	1	U	14.0
56-55-3	Benz[a]anthracene	14.0	1	U	14.0
50-32-8	Benzo(a)pyrene	14.0	1	U	14.0
205-99-2	Benzo(b)fluoranthene	14.0	1	U	14.0
191-24-2	Benzo(ghi)perylene	14.0	1	U	14.0
207-08-9	Benzo(k)fluoranthene	14.0	1	U	14.0
86-74-8	Carbazole	14.0	1	U	14.0
218-01-9	Chrysene	14.0	1	U	14.0
53-70-3	Dibenzo(a,h)anthracene	14.0	1	U	14.0
132-64-9	Dibenzofuran	14.0	1	U	14.0
206-44-0	Fluoranthene	14.0	1	U	14.0
86-73-7	Fluorene	14.0	1	U	14.0
193-39-5	Indeno(1,2,3-cd)pyrene	14.0	1	U	14.0
91-20-3	Naphthalene	14.0	1	U	14.0
85-01-8	Phenanthrene	14.0	1	U	14.0
129-00-0	Pyrene	14.0	1	U	14.0
483-65-8	**Retene**	**8.77**	1	**J**	**14.0**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	436	447	97	30-115
93951-97-4	Acenaphthylene-D8	470	447	105	50-150
1719-06-8	Anthracene-D10	463	447	103	50-150
63466-71-7	Benzo(a)pyrene-D12	457	447	102	50-150
81103-79-9	Fluorene-D10	409	447	91	50-150
1718-52-1	Pyrene-D10	415	447	93	50-150
1718-51-0	Terphenyl-D14	445	447	99	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: OG-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.243 g
Final Vol: 1 mL

Lab ID #: 2304065-10
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 86.76%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.2	1	U	14.2
91-58-7	2-Chloronaphthalene	14.2	1	U	14.2
91-57-6	2-Methylnaphthalene	14.2	1	U	14.2
83-32-9	Acenaphthene	14.2	1	U	14.2
208-96-8	Acenaphthylene	14.2	1	U	14.2
120-12-7	Anthracene	14.2	1	U	14.2
56-55-3	Benz[a]anthracene	14.2	1	U	14.2
50-32-8	Benzo(a)pyrene	14.2	1	U	14.2
205-99-2	Benzo(b)fluoranthene	14.2	1	U	14.2
191-24-2	Benzo(ghi)perylene	14.2	1	U	14.2
207-08-9	Benzo(k)fluoranthene	14.2	1	U	14.2
86-74-8	Carbazole	14.2	1	U	14.2
218-01-9	Chrysene	14.2	1	U	14.2
53-70-3	Dibenzo(a,h)anthracene	14.2	1	U	14.2
132-64-9	Dibenzofuran	14.2	1	U	14.2
206-44-0	**Fluoranthene**	**3.77**	1	**J**	**14.2**
86-73-7	Fluorene	14.2	1	U	14.2
193-39-5	Indeno(1,2,3-cd)pyrene	14.2	1	U	14.2
91-20-3	Naphthalene	14.2	1	U	14.2
85-01-8	Phenanthrene	14.2	1	U	14.2
129-00-0	Pyrene	14.2	1	U	14.2
483-65-8	Retene	14.2	1	U	14.2

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	445	456	98	30-115
93951-97-4	Acenaphthylene-D8	481	456	106	50-150
1719-06-8	Anthracene-D10	487	456	107	50-150
63466-71-7	Benzo(a)pyrene-D12	496	456	109	50-150
81103-79-9	Fluorene-D10	417	456	91	50-150
1718-52-1	Pyrene-D10	453	456	99	50-150
1718-51-0	Terphenyl-D14	485	456	106	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: T-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.084 g
Final Vol: 1 mL

Lab ID #: 2304065-11
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 78.22%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.9	1	U	15.9
91-58-7	2-Chloronaphthalene	15.9	1	U	15.9
91-57-6	2-Methylnaphthalene	15.9	1	U	15.9
83-32-9	Acenaphthene	15.9	1	U	15.9
208-96-8	Acenaphthylene	15.9	1	U	15.9
120-12-7	Anthracene	15.9	1	U	15.9
56-55-3	Benz[a]anthracene	15.9	1	U	15.9
50-32-8	Benzo(a)pyrene	15.9	1	U	15.9
205-99-2	Benzo(b)fluoranthene	15.9	1	U	15.9
191-24-2	Benzo(ghi)perylene	15.9	1	U	15.9
207-08-9	Benzo(k)fluoranthene	15.9	1	U	15.9
86-74-8	Carbazole	15.9	1	U	15.9
218-01-9	Chrysene	15.9	1	U	15.9
53-70-3	Dibenzo(a,h)anthracene	15.9	1	U	15.9
132-64-9	Dibenzofuran	15.9	1	U	15.9
206-44-0	Fluoranthene	15.9	1	U	15.9
86-73-7	Fluorene	15.9	1	U	15.9
193-39-5	Indeno(1,2,3-cd)pyrene	15.9	1	U	15.9
91-20-3	Naphthalene	15.9	1	U	15.9
85-01-8	Phenanthrene	15.9	1	U	15.9
129-00-0	Pyrene	15.9	1	U	15.9
483-65-8	Retene	15.9	1	U	15.9

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	502	509	99	30-115
93951-97-4	Acenaphthylene-D8	542	509	106	50-150
1719-06-8	Anthracene-D10	528	509	104	50-150
63466-71-7	Benzo(a)pyrene-D12	521	509	102	50-150
81103-79-9	Fluorene-D10	471	509	92	50-150
1718-52-1	Pyrene-D10	483	509	95	50-150
1718-51-0	Terphenyl-D14	516	509	101	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: T-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.194 g
Final Vol: 1 mL

Lab ID #: 2304065-12
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 77.06%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	16.1	1	U	16.1
91-58-7	2-Chloronaphthalene	16.1	1	U	16.1
91-57-6	2-Methylnaphthalene	16.1	1	U	16.1
83-32-9	Acenaphthene	16.1	1	U	16.1
208-96-8	Acenaphthylene	16.1	1	U	16.1
120-12-7	Anthracene	16.1	1	U	16.1
56-55-3	Benz[a]anthracene	16.1	1	U	16.1
50-32-8	Benzo(a)pyrene	16.1	1	U	16.1
205-99-2	Benzo(b)fluoranthene	16.1	1	U	16.1
191-24-2	Benzo(ghi)perylene	16.1	1	U	16.1
207-08-9	Benzo(k)fluoranthene	16.1	1	U	16.1
86-74-8	Carbazole	16.1	1	U	16.1
218-01-9	Chrysene	16.1	1	U	16.1
53-70-3	Dibenzo(a,h)anthracene	16.1	1	U	16.1
132-64-9	Dibenzofuran	16.1	1	U	16.1
206-44-0	Fluoranthene	16.1	1	U	16.1
86-73-7	Fluorene	16.1	1	U	16.1
193-39-5	Indeno(1,2,3-cd)pyrene	16.1	1	U	16.1
91-20-3	Naphthalene	16.1	1	U	16.1
85-01-8	Phenanthrene	16.1	1	U	16.1
129-00-0	Pyrene	16.1	1	U	16.1
483-65-8	Retene	16.1	1	U	16.1

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	489	514	95	30-115
93951-97-4	Acenaphthylene-D8	529	514	103	50-150
1719-06-8	Anthracene-D10	528	514	103	50-150
63466-71-7	Benzo(a)pyrene-D12	537	514	104	50-150
81103-79-9	Fluorene-D10	462	514	90	50-150
1718-52-1	Pyrene-D10	486	514	95	50-150
1718-51-0	Terphenyl-D14	517	514	101	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: TP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.467 g
Final Vol: 1 mL

Lab ID #: 2304065-13
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 88.61%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	13.8	1	U	13.8
91-58-7	2-Chloronaphthalene	13.8	1	U	13.8
91-57-6	2-Methylnaphthalene	13.8	1	U	13.8
83-32-9	Acenaphthene	13.8	1	U	13.8
208-96-8	Acenaphthylene	13.8	1	U	13.8
120-12-7	Anthracene	13.8	1	U	13.8
56-55-3	Benz[a]anthracene	13.8	1	U	13.8
50-32-8	Benzo(a)pyrene	13.8	1	U	13.8
205-99-2	Benzo(b)fluoranthene	13.8	1	U	13.8
191-24-2	Benzo(ghi)perylene	13.8	1	U	13.8
207-08-9	Benzo(k)fluoranthene	13.8	1	U	13.8
86-74-8	Carbazole	13.8	1	U	13.8
218-01-9	Chrysene	13.8	1	U	13.8
53-70-3	Dibenzo(a,h)anthracene	13.8	1	U	13.8
132-64-9	Dibenzofuran	13.8	1	U	13.8
206-44-0	**Fluoranthene**	**2.71**	1	**J**	**13.8**
86-73-7	Fluorene	13.8	1	U	13.8
193-39-5	Indeno(1,2,3-cd)pyrene	13.8	1	U	13.8
91-20-3	Naphthalene	13.8	1	U	13.8
85-01-8	Phenanthrene	13.8	1	U	13.8
129-00-0	Pyrene	13.8	1	U	13.8
483-65-8	**Retene**	**5.89**	1	**J**	**13.8**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	435	441	99	30-115
93951-97-4	Acenaphthylene-D8	470	441	107	50-150
1719-06-8	Anthracene-D10	463	441	105	50-150
63466-71-7	Benzo(a)pyrene-D12	487	441	110	50-150
81103-79-9	Fluorene-D10	418	441	95	50-150
1718-52-1	Pyrene-D10	424	441	96	50-150
1718-51-0	Terphenyl-D14	443	441	101	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: TP-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.003 g
Final Vol: 1 mL

Lab ID #: 2304065-14
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 88.79%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.1	1	U	14.1
91-58-7	2-Chloronaphthalene	14.1	1	U	14.1
91-57-6	2-Methylnaphthalene	14.1	1	U	14.1
83-32-9	Acenaphthene	14.1	1	U	14.1
208-96-8	Acenaphthylene	14.1	1	U	14.1
120-12-7	Anthracene	14.1	1	U	14.1
56-55-3	Benz[a]anthracene	14.1	1	U	14.1
50-32-8	Benzo(a)pyrene	14.1	1	U	14.1
205-99-2	Benzo(b)fluoranthene	14.1	1	U	14.1
191-24-2	Benzo(ghi)perylene	14.1	1	U	14.1
207-08-9	Benzo(k)fluoranthene	14.1	1	U	14.1
86-74-8	Carbazole	14.1	1	U	14.1
218-01-9	Chrysene	14.1	1	U	14.1
53-70-3	Dibenzo(a,h)anthracene	14.1	1	U	14.1
132-64-9	Dibenzofuran	14.1	1	U	14.1
206-44-0	Fluoranthene	14.1	1	U	14.1
86-73-7	Fluorene	14.1	1	U	14.1
193-39-5	Indeno(1,2,3-cd)pyrene	14.1	1	U	14.1
91-20-3	Naphthalene	14.1	1	U	14.1
85-01-8	Phenanthrene	14.1	1	U	14.1
129-00-0	Pyrene	14.1	1	U	14.1
483-65-8	Retene	14.1	1	U	14.1

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	427	450	95	30-115
93951-97-4	Acenaphthylene-D8	470	450	104	50-150
1719-06-8	Anthracene-D10	485	450	108	50-150
63466-71-7	Benzo(a)pyrene-D12	457	450	101	50-150
81103-79-9	Fluorene-D10	409	450	91	50-150
1718-52-1	Pyrene-D10	424	450	94	50-150
1718-51-0	Terphenyl-D14	455	450	101	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: BM-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.083 g
Final Vol: 1 mL

Lab ID #: 2304065-15
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 88.35%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.1	1	U	14.1
91-58-7	2-Chloronaphthalene	14.1	1	U	14.1
91-57-6	2-Methylnaphthalene	14.1	1	U	14.1
83-32-9	Acenaphthene	14.1	1	U	14.1
208-96-8	Acenaphthylene	14.1	1	U	14.1
120-12-7	Anthracene	14.1	1	U	14.1
56-55-3	Benz[a]anthracene	14.1	1	U	14.1
50-32-8	Benzo(a)pyrene	14.1	1	U	14.1
205-99-2	Benzo(b)fluoranthene	14.1	1	U	14.1
191-24-2	Benzo(ghi)perylene	14.1	1	U	14.1
207-08-9	Benzo(k)fluoranthene	14.1	1	U	14.1
86-74-8	Carbazole	14.1	1	U	14.1
218-01-9	Chrysene	14.1	1	U	14.1
53-70-3	Dibenzo(a,h)anthracene	14.1	1	U	14.1
132-64-9	Dibenzofuran	14.1	1	U	14.1
206-44-0	Fluoranthene	14.1	1	U	14.1
86-73-7	Fluorene	14.1	1	U	14.1
193-39-5	Indeno(1,2,3-cd)pyrene	14.1	1	U	14.1
91-20-3	Naphthalene	14.1	1	U	14.1
85-01-8	Phenanthrene	14.1	1	U	14.1
129-00-0	Pyrene	14.1	1	U	14.1
483-65-8	Retene	14.1	1	U	14.1

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	453	451	100	30-115
93951-97-4	Acenaphthylene-D8	494	451	110	50-150
1719-06-8	Anthracene-D10	491	451	109	50-150
63466-71-7	Benzo(a)pyrene-D12	468	451	104	50-150
81103-79-9	Fluorene-D10	430	451	95	50-150
1718-52-1	Pyrene-D10	433	451	96	50-150
1718-51-0	Terphenyl-D14	469	451	104	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling   Field ID: BM-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.377 g
Final Vol: 1 mL

Lab ID #: 2304065-16
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 86.56%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.2	1	U	14.2
91-58-7	2-Chloronaphthalene	14.2	1	U	14.2
91-57-6	2-Methylnaphthalene	14.2	1	U	14.2
83-32-9	Acenaphthene	14.2	1	U	14.2
208-96-8	Acenaphthylene	14.2	1	U	14.2
120-12-7	Anthracene	14.2	1	U	14.2
56-55-3	Benz[a]anthracene	14.2	1	U	14.2
50-32-8	Benzo(a)pyrene	14.2	1	U	14.2
205-99-2	Benzo(b)fluoranthene	14.2	1	U	14.2
191-24-2	Benzo(ghi)perylene	14.2	1	U	14.2
207-08-9	Benzo(k)fluoranthene	14.2	1	U	14.2
86-74-8	Carbazole	14.2	1	U	14.2
218-01-9	Chrysene	14.2	1	U	14.2
53-70-3	Dibenzo(a,h)anthracene	14.2	1	U	14.2
132-64-9	Dibenzofuran	14.2	1	U	14.2
206-44-0	Fluoranthene	14.2	1	U	14.2
86-73-7	Fluorene	14.2	1	U	14.2
193-39-5	Indeno(1,2,3-cd)pyrene	14.2	1	U	14.2
91-20-3	Naphthalene	14.2	1	U	14.2
85-01-8	Phenanthrene	14.2	1	U	14.2
129-00-0	Pyrene	14.2	1	U	14.2
483-65-8	**Retene**	**6.05**	1	**J**	**14.2**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	448	454	99	30-115
93951-97-4	Acenaphthylene-D8	479	454	106	50-150
1719-06-8	Anthracene-D10	476	454	105	50-150
63466-71-7	Benzo(a)pyrene-D12	471	454	104	50-150
81103-79-9	Fluorene-D10	410	454	90	50-150
1718-52-1	Pyrene-D10	434	454	96	50-150
1718-51-0	Terphenyl-D14	465	454	103	18-137

Authorized by: Karin Bailey   **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling | **Field ID: BM-SA2(D)**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.265 g
Final Vol: 1 mL

Lab ID #: 2304065-17
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 87.38%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.1	1	U	14.1
91-58-7	2-Chloronaphthalene	14.1	1	U	14.1
91-57-6	2-Methylnaphthalene	14.1	1	U	14.1
83-32-9	Acenaphthene	14.1	1	U	14.1
208-96-8	Acenaphthylene	14.1	1	U	14.1
120-12-7	Anthracene	14.1	1	U	14.1
56-55-3	Benz[a]anthracene	14.1	1	U	14.1
50-32-8	Benzo(a)pyrene	14.1	1	U	14.1
205-99-2	Benzo(b)fluoranthene	14.1	1	U	14.1
191-24-2	Benzo(ghi)perylene	14.1	1	U	14.1
207-08-9	Benzo(k)fluoranthene	14.1	1	U	14.1
86-74-8	Carbazole	14.1	1	U	14.1
218-01-9	Chrysene	14.1	1	U	14.1
53-70-3	Dibenzo(a,h)anthracene	14.1	1	U	14.1
132-64-9	Dibenzofuran	14.1	1	U	14.1
206-44-0	Fluoranthene	14.1	1	U	14.1
86-73-7	Fluorene	14.1	1	U	14.1
193-39-5	Indeno(1,2,3-cd)pyrene	14.1	1	U	14.1
91-20-3	Naphthalene	14.1	1	U	14.1
85-01-8	Phenanthrene	14.1	1	U	14.1
129-00-0	Pyrene	14.1	1	U	14.1
483-65-8	**Retene**	**6.33**	1	**J**	**14.1**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	442	452	98	30-115
93951-97-4	Acenaphthylene-D8	475	452	105	50-150
1719-06-8	Anthracene-D10	472	452	105	50-150
63466-71-7	Benzo(a)pyrene-D12	472	452	104	50-150
81103-79-9	Fluorene-D10	407	452	90	50-150
1718-52-1	Pyrene-D10	448	452	99	50-150
1718-51-0	Terphenyl-D14	474	452	105	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: GG-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.044 g
Final Vol: 1 mL

Lab ID #: 2304065-18
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 80.51%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.5	1	U	15.5
91-58-7	2-Chloronaphthalene	15.5	1	U	15.5
91-57-6	2-Methylnaphthalene	15.5	1	U	15.5
83-32-9	Acenaphthene	15.5	1	U	15.5
208-96-8	Acenaphthylene	15.5	1	U	15.5
120-12-7	Anthracene	15.5	1	U	15.5
56-55-3	Benz[a]anthracene	15.5	1	U	15.5
50-32-8	Benzo(a)pyrene	15.5	1	U	15.5
205-99-2	Benzo(b)fluoranthene	15.5	1	U	15.5
191-24-2	Benzo(ghi)perylene	15.5	1	U	15.5
207-08-9	Benzo(k)fluoranthene	15.5	1	U	15.5
86-74-8	Carbazole	15.5	1	U	15.5
218-01-9	Chrysene	15.5	1	U	15.5
53-70-3	Dibenzo(a,h)anthracene	15.5	1	U	15.5
132-64-9	Dibenzofuran	15.5	1	U	15.5
206-44-0	**Fluoranthene**	**7.18**	1	**J**	**15.5**
86-73-7	Fluorene	15.5	1	U	15.5
193-39-5	Indeno(1,2,3-cd)pyrene	15.5	1	U	15.5
91-20-3	Naphthalene	15.5	1	U	15.5
85-01-8	Phenanthrene	15.5	1	U	15.5
129-00-0	**Pyrene**	**4.36**	1	**J**	**15.5**
483-65-8	Retene	15.5	1	U	15.5

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	419	496	85	30-115
93951-97-4	Acenaphthylene-D8	464	496	94	50-150
1719-06-8	Anthracene-D10	496	496	100	50-150
63466-71-7	Benzo(a)pyrene-D12	611	496	123	50-150
81103-79-9	Fluorene-D10	434	496	88	50-150
1718-52-1	Pyrene-D10	508	496	102	50-150
1718-51-0	Terphenyl-D14	541	496	109	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling　　Field ID: GG-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.127 g
Final Vol: 1 mL

Lab ID #: 2304065-19
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 80.81%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.4	1	U	15.4
91-58-7	2-Chloronaphthalene	15.4	1	U	15.4
91-57-6	2-Methylnaphthalene	15.4	1	U	15.4
83-32-9	Acenaphthene	15.4	1	U	15.4
208-96-8	Acenaphthylene	15.4	1	U	15.4
120-12-7	Anthracene	15.4	1	U	15.4
56-55-3	Benz[a]anthracene	15.4	1	U	15.4
50-32-8	Benzo(a)pyrene	15.4	1	U	15.4
205-99-2	Benzo(b)fluoranthene	15.4	1	U	15.4
191-24-2	Benzo(ghi)perylene	15.4	1	U	15.4
207-08-9	Benzo(k)fluoranthene	15.4	1	U	15.4
86-74-8	Carbazole	15.4	1	U	15.4
218-01-9	Chrysene	15.4	1	U	15.4
53-70-3	Dibenzo(a,h)anthracene	15.4	1	U	15.4
132-64-9	Dibenzofuran	15.4	1	U	15.4
206-44-0	**Fluoranthene**	**5.85**	1	**J**	**15.4**
86-73-7	Fluorene	15.4	1	U	15.4
193-39-5	Indeno(1,2,3-cd)pyrene	15.4	1	U	15.4
91-20-3	Naphthalene	15.4	1	U	15.4
85-01-8	Phenanthrene	15.4	1	U	15.4
129-00-0	Pyrene	15.4	1	U	15.4
483-65-8	Retene	15.4	1	U	15.4

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	414	492	84	30-115
93951-97-4	Acenaphthylene-D8	465	492	94	50-150
1719-06-8	Anthracene-D10	487	492	99	50-150
63466-71-7	Benzo(a)pyrene-D12	547	492	111	50-150
81103-79-9	Fluorene-D10	430	492	87	50-150
1718-52-1	Pyrene-D10	486	492	99	50-150
1718-51-0	Terphenyl-D14	510	492	104	18-137

Authorized by: Karin Bailey　　**Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling

Field ID: GRP-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.001 g
Final Vol: 1 mL

Lab ID #: 2304065-20
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 87.33%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.3	1	U	14.3
91-58-7	2-Chloronaphthalene	14.3	1	U	14.3
91-57-6	2-Methylnaphthalene	14.3	1	U	14.3
83-32-9	Acenaphthene	14.3	1	U	14.3
208-96-8	Acenaphthylene	14.3	1	U	14.3
120-12-7	Anthracene	14.3	1	U	14.3
56-55-3	Benz[a]anthracene	14.3	1	U	14.3
50-32-8	Benzo(a)pyrene	14.3	1	U	14.3
205-99-2	Benzo(b)fluoranthene	14.3	1	U	14.3
191-24-2	Benzo(ghi)perylene	14.3	1	U	14.3
207-08-9	Benzo(k)fluoranthene	14.3	1	U	14.3
86-74-8	Carbazole	14.3	1	U	14.3
218-01-9	Chrysene	14.3	1	U	14.3
53-70-3	Dibenzo(a,h)anthracene	14.3	1	U	14.3
132-64-9	Dibenzofuran	14.3	1	U	14.3
206-44-0	**Fluoranthene**	**3.04**	1	**J**	**14.3**
86-73-7	Fluorene	14.3	1	U	14.3
193-39-5	Indeno(1,2,3-cd)pyrene	14.3	1	U	14.3
91-20-3	Naphthalene	14.3	1	U	14.3
85-01-8	Phenanthrene	14.3	1	U	14.3
129-00-0	Pyrene	14.3	1	U	14.3
483-65-8	Retene	14.3	1	U	14.3

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	410	458	89	30-115
93951-97-4	Acenaphthylene-D8	452	458	99	50-150
1719-06-8	Anthracene-D10	454	458	99	50-150
63466-71-7	Benzo(a)pyrene-D12	479	458	105	50-150
81103-79-9	Fluorene-D10	416	458	91	50-150
1718-52-1	Pyrene-D10	465	458	102	50-150
1718-51-0	Terphenyl-D14	481	458	105	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: GRP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.228 g
Final Vol: 1 mL

Lab ID #: 2304065-21
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 86.08%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.4	1	U	14.4
91-58-7	2-Chloronaphthalene	14.4	1	U	14.4
91-57-6	2-Methylnaphthalene	14.4	1	U	14.4
83-32-9	Acenaphthene	14.4	1	U	14.4
208-96-8	Acenaphthylene	14.4	1	U	14.4
120-12-7	Anthracene	14.4	1	U	14.4
56-55-3	Benz[a]anthracene	14.4	1	U	14.4
50-32-8	Benzo(a)pyrene	14.4	1	U	14.4
205-99-2	Benzo(b)fluoranthene	14.4	1	U	14.4
191-24-2	Benzo(ghi)perylene	14.4	1	U	14.4
207-08-9	Benzo(k)fluoranthene	14.4	1	U	14.4
86-74-8	Carbazole	14.4	1	U	14.4
218-01-9	Chrysene	14.4	1	U	14.4
53-70-3	Dibenzo(a,h)anthracene	14.4	1	U	14.4
132-64-9	Dibenzofuran	14.4	1	U	14.4
206-44-0	**Fluoranthene**	**3.17**	1	**J**	**14.4**
86-73-7	Fluorene	14.4	1	U	14.4
193-39-5	Indeno(1,2,3-cd)pyrene	14.4	1	U	14.4
91-20-3	Naphthalene	14.4	1	U	14.4
85-01-8	Phenanthrene	14.4	1	U	14.4
129-00-0	Pyrene	14.4	1	U	14.4
483-65-8	Retene	14.4	1	U	14.4

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	457	459	99	30-115
93951-97-4	Acenaphthylene-D8	497	459	108	50-150
1719-06-8	Anthracene-D10	469	459	102	50-150
63466-71-7	Benzo(a)pyrene-D12	535	459	117	50-150
81103-79-9	Fluorene-D10	435	459	95	50-150
1718-52-1	Pyrene-D10	461	459	100	50-150
1718-51-0	Terphenyl-D14	488	459	106	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: EP-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.101 g
Final Vol: 1 mL

Lab ID #: 2304065-22
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 82.88%

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.0	1	U	15.0
91-58-7	2-Chloronaphthalene	15.0	1	U	15.0
91-57-6	2-Methylnaphthalene	15.0	1	U	15.0
83-32-9	Acenaphthene	15.0	1	U	15.0
208-96-8	Acenaphthylene	15.0	1	U	15.0
120-12-7	Anthracene	15.0	1	U	15.0
56-55-3	Benz[a]anthracene	15.0	1	U	15.0
50-32-8	Benzo(a)pyrene	15.0	1	U	15.0
205-99-2	Benzo(b)fluoranthene	15.0	1	U	15.0
191-24-2	Benzo(ghi)perylene	15.0	1	U	15.0
207-08-9	Benzo(k)fluoranthene	15.0	1	U	15.0
86-74-8	Carbazole	15.0	1	U	15.0
218-01-9	Chrysene	15.0	1	U	15.0
53-70-3	Dibenzo(a,h)anthracene	15.0	1	U	15.0
132-64-9	Dibenzofuran	15.0	1	U	15.0
206-44-0	Fluoranthene	15.0	1	U	15.0
86-73-7	Fluorene	15.0	1	U	15.0
193-39-5	Indeno(1,2,3-cd)pyrene	15.0	1	U	15.0
91-20-3	Naphthalene	15.0	1	U	15.0
85-01-8	Phenanthrene	15.0	1	U	15.0
129-00-0	Pyrene	15.0	1	U	15.0
483-65-8	Retene	15.0	1	U	15.0

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	432	480	90	30-115
93951-97-4	Acenaphthylene-D8	485	480	101	50-150
1719-06-8	Anthracene-D10	505	480	105	50-150
63466-71-7	Benzo(a)pyrene-D12	563	480	117	50-150
81103-79-9	Fluorene-D10	440	480	92	50-150
1718-52-1	Pyrene-D10	479	480	100	50-150
1718-51-0	Terphenyl-D14	506	480	105	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling

QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D144-BLK1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D144-BLK1

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	12.5	U	12.5
91-58-7	2-Chloronaphthalene	12.5	U	12.5
91-57-6	2-Methylnaphthalene	12.5	U	12.5
83-32-9	Acenaphthene	12.5	U	12.5
208-96-8	Acenaphthylene	12.5	U	12.5
120-12-7	Anthracene	12.5	U	12.5
56-55-3	**Benz[a]anthracene**	**2.40**	**J**	**12.5**
50-32-8	Benzo(a)pyrene	12.5	U	12.5
205-99-2	Benzo(b)fluoranthene	12.5	U	12.5
191-24-2	Benzo(ghi)perylene	12.5	U	12.5
207-08-9	Benzo(k)fluoranthene	12.5	U	12.5
86-74-8	**Carbazole**	**3.72**	**J**	**12.5**
218-01-9	Chrysene	12.5	U	12.5
53-70-3	Dibenzo(a,h)anthracene	12.5	U	12.5
132-64-9	Dibenzofuran	12.5	U	12.5
206-44-0	Fluoranthene	12.5	U	12.5
86-73-7	Fluorene	12.5	U	12.5
193-39-5	Indeno(1,2,3-cd)pyrene	12.5	U	12.5
91-20-3	Naphthalene	12.5	U	12.5
85-01-8	Phenanthrene	12.5	U	12.5
129-00-0	Pyrene	12.5	U	12.5
483-65-8	Retene	12.5	U	12.5

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	303	400	76	30-115
93951-97-4	Acenaphthylene-D8	327	400	82	50-150
1719-06-8	Anthracene-D10	329	400	82	50-150
63466-71-7	Benzo(a)pyrene-D12	331	400	83	50-150
81103-79-9	Fluorene-D10	311	400	78	50-150
1718-52-1	Pyrene-D10	312	400	78	50-150
1718-51-0	Terphenyl-D14	315	400	79	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D144-BS1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D144-BS1

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
1-Methylnaphthalene	437	500	12.5	87	50-150
2-Chloronaphthalene	448	500	12.5	90	50-150
2-Methylnaphthalene	440	500	12.5	88	50-150
Acenaphthene	443	500	12.5	89	50-150
Acenaphthylene	466	500	12.5	93	50-150
Anthracene	477	500	12.5	95	50-150
Benz[a]anthracene	473	500	12.5	95	50-150
Benzo(a)pyrene	459	500	12.5	92	50-150
Benzo(b)fluoranthene	445	500	12.5	89	50-150
Benzo(ghi)perylene	437	500	12.5	87	50-150
Benzo(k)fluoranthene	463	500	12.5	93	50-150
Carbazole	448	500	12.5	90	50-150
Chrysene	466	500	12.5	93	50-150
Dibenzo(a,h)anthracene	446	500	12.5	89	50-150
Dibenzofuran	438	500	12.5	88	50-150
Fluoranthene	453	500	12.5	91	50-150
Fluorene	447	500	12.5	89	50-150
Indeno(1,2,3-cd)pyrene	440	500	12.5	88	50-150
Naphthalene	435	500	12.5	87	50-150
Phenanthrene	448	500	12.5	90	50-150
Pyrene	462	500	12.5	92	50-150
Retene	463	500	12.5	93	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	355	400	89	30-115
93951-97-4	Acenaphthylene-D8	381	400	95	50-150
1719-06-8	Anthracene-D10	380	400	95	50-150
63466-71-7	Benzo(a)pyrene-D12	373	400	93	50-150
81103-79-9	Fluorene-D10	341	400	85	50-150
1718-52-1	Pyrene-D10	346	400	86	50-150
1718-51-0	Terphenyl-D14	378	400	94	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
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Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D144-BSD1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D144-BSD1

Batch ID: B23D144
Prepared: 4/21/2023
Analyzed: 4/26/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
1-Methylnaphthalene	458	500	92	5	50-150	40
2-Chloronaphthalene	473	500	95	5	50-150	40
2-Methylnaphthalene	458	500	92	4	50-150	40
Acenaphthene	470	500	94	6	50-150	40
Acenaphthylene	494	500	99	6	50-150	40
Anthracene	511	500	102	7	50-150	40
Benz[a]anthracene	494	500	99	4	50-150	40
Benzo(a)pyrene	482	500	96	5	50-150	40
Benzo(b)fluoranthene	478	500	96	7	50-150	40
Benzo(ghi)perylene	465	500	93	6	50-150	40
Benzo(k)fluoranthene	494	500	99	6	50-150	40
Carbazole	477	500	95	6	50-150	40
Chrysene	484	500	97	4	50-150	40
Dibenzo(a,h)anthracene	474	500	95	6	50-150	40
Dibenzofuran	464	500	93	6	50-150	40
Fluoranthene	471	500	94	4	50-150	40
Fluorene	477	500	95	7	50-150	40
Indeno(1,2,3-cd)pyrene	474	500	95	7	50-150	40
Naphthalene	449	500	90	3	50-150	40
Phenanthrene	481	500	96	7	50-150	40
Pyrene	491	500	98	6	50-150	40
Retene	488	500	98	5	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	373	400	93	30-115
93951-97-4	Acenaphthylene-D8	406	400	101	50-150
1719-06-8	Anthracene-D10	404	400	101	50-150
63466-71-7	Benzo(a)pyrene-D12	394	400	98	50-150
81103-79-9	Fluorene-D10	361	400	90	50-150
1718-52-1	Pyrene-D10	365	400	91	50-150
1718-51-0	Terphenyl-D14	399	400	100	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

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Project: LCB Sampling **Field ID: EP-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.103 g
Final Vol: 1 mL

Lab ID #: 2304065-23
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 84.28%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.8	1	U	14.8
91-58-7	2-Chloronaphthalene	14.8	1	U	14.8
91-57-6	2-Methylnaphthalene	14.8	1	U	14.8
83-32-9	Acenaphthene	14.8	1	U	14.8
208-96-8	Acenaphthylene	14.8	1	U	14.8
120-12-7	Anthracene	14.8	1	U	14.8
56-55-3	Benz[a]anthracene	14.8	1	U	14.8
50-32-8	Benzo(a)pyrene	14.8	1	U	14.8
205-99-2	Benzo(b)fluoranthene	14.8	1	U	14.8
191-24-2	Benzo(ghi)perylene	14.8	1	U	14.8
207-08-9	Benzo(k)fluoranthene	14.8	1	U	14.8
86-74-8	Carbazole	14.8	1	U	14.8
218-01-9	Chrysene	14.8	1	U	14.8
53-70-3	Dibenzo(a,h)anthracene	14.8	1	U	14.8
132-64-9	Dibenzofuran	14.8	1	U	14.8
206-44-0	Fluoranthene	14.8	1	U	14.8
86-73-7	Fluorene	14.8	1	U	14.8
193-39-5	Indeno(1,2,3-cd)pyrene	14.8	1	U	14.8
91-20-3	Naphthalene	14.8	1	U	14.8
85-01-8	Phenanthrene	14.8	1	U	14.8
129-00-0	Pyrene	14.8	1	U	14.8
483-65-8	**Retene**	**6.61**	1	**J**	**14.8**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	415	472	88	30-115
93951-97-4	Acenaphthylene-D8	463	472	98	50-150
1719-06-8	Anthracene-D10	497	472	105	50-150
63466-71-7	Benzo(a)pyrene-D12	557	472	118	50-150
81103-79-9	Fluorene-D10	420	472	89	50-150
1718-52-1	Pyrene-D10	456	472	97	50-150
1718-51-0	Terphenyl-D14	487	472	103	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

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Project: LCB Sampling **Field ID: PSV-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.001 g
Final Vol: 1 mL

Lab ID #: 2304065-24
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 82.20%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.2	1	U	15.2
91-58-7	2-Chloronaphthalene	15.2	1	U	15.2
91-57-6	2-Methylnaphthalene	15.2	1	U	15.2
83-32-9	Acenaphthene	15.2	1	U	15.2
208-96-8	Acenaphthylene	15.2	1	U	15.2
120-12-7	Anthracene	15.2	1	U	15.2
56-55-3	Benz[a]anthracene	15.2	1	U	15.2
50-32-8	Benzo(a)pyrene	15.2	1	U	15.2
205-99-2	Benzo(b)fluoranthene	15.2	1	U	15.2
191-24-2	Benzo(ghi)perylene	15.2	1	U	15.2
207-08-9	Benzo(k)fluoranthene	15.2	1	U	15.2
86-74-8	Carbazole	15.2	1	U	15.2
218-01-9	Chrysene	15.2	1	U	15.2
53-70-3	Dibenzo(a,h)anthracene	15.2	1	U	15.2
132-64-9	Dibenzofuran	15.2	1	U	15.2
206-44-0	Fluoranthene	15.2	1	U	15.2
86-73-7	Fluorene	15.2	1	U	15.2
193-39-5	Indeno(1,2,3-cd)pyrene	15.2	1	U	15.2
91-20-3	Naphthalene	15.2	1	U	15.2
85-01-8	Phenanthrene	15.2	1	U	15.2
129-00-0	Pyrene	15.2	1	U	15.2
483-65-8	Retene	15.2	1	U	15.2

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	477	487	98	30-115
93951-97-4	Acenaphthylene-D8	518	487	106	50-150
1719-06-8	Anthracene-D10	512	487	105	50-150
63466-71-7	Benzo(a)pyrene-D12	549	487	113	50-150
81103-79-9	Fluorene-D10	451	487	93	50-150
1718-52-1	Pyrene-D10	481	487	99	50-150
1718-51-0	Terphenyl-D14	507	487	104	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

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Project: LCB Sampling — Field ID: PSV-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.115 g
Final Vol: 1 mL

Lab ID #: 2304065-25
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 81.02%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.3	1	U	15.3
91-58-7	2-Chloronaphthalene	15.3	1	U	15.3
91-57-6	2-Methylnaphthalene	15.3	1	U	15.3
83-32-9	Acenaphthene	15.3	1	U	15.3
208-96-8	Acenaphthylene	15.3	1	U	15.3
120-12-7	Anthracene	15.3	1	U	15.3
56-55-3	Benz[a]anthracene	15.3	1	U	15.3
50-32-8	Benzo(a)pyrene	15.3	1	U	15.3
205-99-2	Benzo(b)fluoranthene	15.3	1	U	15.3
191-24-2	Benzo(ghi)perylene	15.3	1	U	15.3
207-08-9	Benzo(k)fluoranthene	15.3	1	U	15.3
86-74-8	Carbazole	15.3	1	U	15.3
218-01-9	Chrysene	15.3	1	U	15.3
53-70-3	Dibenzo(a,h)anthracene	15.3	1	U	15.3
132-64-9	Dibenzofuran	15.3	1	U	15.3
206-44-0	Fluoranthene	15.3	1	U	15.3
86-73-7	Fluorene	15.3	1	U	15.3
193-39-5	Indeno(1,2,3-cd)pyrene	15.3	1	U	15.3
91-20-3	Naphthalene	15.3	1	U	15.3
85-01-8	Phenanthrene	15.3	1	U	15.3
129-00-0	Pyrene	15.3	1	U	15.3
483-65-8	**Retene**	**7.38**	1	**J**	**15.3**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	475	491	97	30-115
93951-97-4	Acenaphthylene-D8	525	491	107	50-150
1719-06-8	Anthracene-D10	528	491	107	50-150
63466-71-7	Benzo(a)pyrene-D12	547	491	111	50-150
81103-79-9	Fluorene-D10	469	491	95	50-150
1718-52-1	Pyrene-D10	514	491	105	50-150
1718-51-0	Terphenyl-D14	535	491	109	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

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Project: LCB Sampling — Field ID: SLS-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.179 g
Final Vol: 1 mL

Lab ID #: 2304065-26
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 80.78%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.3	1	U	15.3
91-58-7	2-Chloronaphthalene	15.3	1	U	15.3
91-57-6	2-Methylnaphthalene	15.3	1	U	15.3
83-32-9	Acenaphthene	15.3	1	U	15.3
208-96-8	Acenaphthylene	15.3	1	U	15.3
120-12-7	Anthracene	15.3	1	U	15.3
56-55-3	Benz[a]anthracene	15.3	1	U	15.3
50-32-8	Benzo(a)pyrene	15.3	1	U	15.3
205-99-2	Benzo(b)fluoranthene	15.3	1	U	15.3
191-24-2	Benzo(ghi)perylene	15.3	1	U	15.3
207-08-9	Benzo(k)fluoranthene	15.3	1	U	15.3
86-74-8	Carbazole	15.3	1	U	15.3
218-01-9	Chrysene	15.3	1	U	15.3
53-70-3	Dibenzo(a,h)anthracene	15.3	1	U	15.3
132-64-9	Dibenzofuran	15.3	1	U	15.3
206-44-0	Fluoranthene	15.3	1	U	15.3
86-73-7	Fluorene	15.3	1	U	15.3
193-39-5	Indeno(1,2,3-cd)pyrene	15.3	1	U	15.3
91-20-3	Naphthalene	15.3	1	U	15.3
85-01-8	Phenanthrene	15.3	1	U	15.3
129-00-0	Pyrene	15.3	1	U	15.3
483-65-8	**Retene**	**7.71**	1	**J**	**15.3**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	414	491	84	30-115
93951-97-4	Acenaphthylene-D8	462	491	94	50-150
1719-06-8	Anthracene-D10	501	491	102	50-150
63466-71-7	Benzo(a)pyrene-D12	509	491	104	50-150
81103-79-9	Fluorene-D10	417	491	85	50-150
1718-52-1	Pyrene-D10	461	491	94	50-150
1718-51-0	Terphenyl-D14	485	491	99	18-137

Authorized by: Karin Bailey

Release Date: 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: SLS-SA2**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.074 g
Final Vol: 1 mL

Lab ID #: 2304065-27
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 80.05%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	15.6	1	U	15.6
91-58-7	2-Chloronaphthalene	15.6	1	U	15.6
91-57-6	2-Methylnaphthalene	15.6	1	U	15.6
83-32-9	Acenaphthene	15.6	1	U	15.6
208-96-8	Acenaphthylene	15.6	1	U	15.6
120-12-7	Anthracene	15.6	1	U	15.6
56-55-3	Benz[a]anthracene	15.6	1	U	15.6
50-32-8	Benzo(a)pyrene	15.6	1	U	15.6
205-99-2	Benzo(b)fluoranthene	15.6	1	U	15.6
191-24-2	Benzo(ghi)perylene	15.6	1	U	15.6
207-08-9	Benzo(k)fluoranthene	15.6	1	U	15.6
86-74-8	**Carbazole**	**5.87**	1	**J**	**15.6**
218-01-9	Chrysene	15.6	1	U	15.6
53-70-3	Dibenzo(a,h)anthracene	15.6	1	U	15.6
132-64-9	Dibenzofuran	15.6	1	U	15.6
206-44-0	Fluoranthene	15.6	1	U	15.6
86-73-7	Fluorene	15.6	1	U	15.6
193-39-5	Indeno(1,2,3-cd)pyrene	15.6	1	U	15.6
91-20-3	Naphthalene	15.6	1	U	15.6
85-01-8	Phenanthrene	15.6	1	U	15.6
129-00-0	**Pyrene**	**4.21**	1	**J**	**15.6**
483-65-8	**Retene**	**7.91**	1	**J**	**15.6**

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	421	498	85	30-115
93951-97-4	Acenaphthylene-D8	472	498	95	50-150
1719-06-8	Anthracene-D10	526	498	106	50-150
63466-71-7	Benzo(a)pyrene-D12	541	498	109	50-150
81103-79-9	Fluorene-D10	443	498	89	50-150
1718-52-1	Pyrene-D10	508	498	102	50-150
1718-51-0	Terphenyl-D14	536	498	108	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **Field ID: AT-SA1**

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.254 g
Final Vol: 1 mL

Lab ID #: 2304065-28
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 77.09%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	16.0	1	U	16.0
91-58-7	2-Chloronaphthalene	16.0	1	U	16.0
91-57-6	2-Methylnaphthalene	16.0	1	U	16.0
83-32-9	Acenaphthene	16.0	1	U	16.0
208-96-8	Acenaphthylene	16.0	1	U	16.0
120-12-7	Anthracene	16.0	1	U	16.0
56-55-3	Benz[a]anthracene	16.0	1	U	16.0
50-32-8	Benzo(a)pyrene	16.0	1	U	16.0
205-99-2	Benzo(b)fluoranthene	16.0	1	U	16.0
191-24-2	Benzo(ghi)perylene	16.0	1	U	16.0
207-08-9	Benzo(k)fluoranthene	16.0	1	U	16.0
86-74-8	**Carbazole**	**6.54**	1	**J**	**16.0**
218-01-9	Chrysene	16.0	1	U	16.0
53-70-3	Dibenzo(a,h)anthracene	16.0	1	U	16.0
132-64-9	Dibenzofuran	16.0	1	U	16.0
206-44-0	Fluoranthene	16.0	1	U	16.0
86-73-7	Fluorene	16.0	1	U	16.0
193-39-5	Indeno(1,2,3-cd)pyrene	16.0	1	U	16.0
91-20-3	Naphthalene	16.0	1	U	16.0
85-01-8	Phenanthrene	16.0	1	U	16.0
129-00-0	Pyrene	16.0	1	U	16.0
483-65-8	Retene	16.0	1	U	16.0

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	463	512	90	30-115
93951-97-4	Acenaphthylene-D8	525	512	102	50-150
1719-06-8	Anthracene-D10	534	512	104	50-150
63466-71-7	Benzo(a)pyrene-D12	578	512	113	50-150
81103-79-9	Fluorene-D10	469	512	92	50-150
1718-52-1	Pyrene-D10	508	512	99	50-150
1718-51-0	Terphenyl-D14	538	512	105	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: AT-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.088 g
Final Vol: 1 mL

Lab ID #: 2304065-29
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 75.03%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	16.6	1	U	16.6
91-58-7	2-Chloronaphthalene	16.6	1	U	16.6
91-57-6	2-Methylnaphthalene	16.6	1	U	16.6
83-32-9	Acenaphthene	16.6	1	U	16.6
208-96-8	Acenaphthylene	16.6	1	U	16.6
120-12-7	Anthracene	16.6	1	U	16.6
56-55-3	Benz[a]anthracene	16.6	1	U	16.6
50-32-8	Benzo(a)pyrene	16.6	1	U	16.6
205-99-2	Benzo(b)fluoranthene	16.6	1	U	16.6
191-24-2	Benzo(ghi)perylene	16.6	1	U	16.6
207-08-9	Benzo(k)fluoranthene	16.6	1	U	16.6
86-74-8	**Carbazole**	**7.07**	1	**J**	**16.6**
218-01-9	Chrysene	16.6	1	U	16.6
53-70-3	Dibenzo(a,h)anthracene	16.6	1	U	16.6
132-64-9	Dibenzofuran	16.6	1	U	16.6
206-44-0	Fluoranthene	16.6	1	U	16.6
86-73-7	Fluorene	16.6	1	U	16.6
193-39-5	Indeno(1,2,3-cd)pyrene	16.6	1	U	16.6
91-20-3	Naphthalene	16.6	1	U	16.6
85-01-8	Phenanthrene	16.6	1	U	16.6
129-00-0	Pyrene	16.6	1	U	16.6
483-65-8	Retene	16.6	1	U	16.6

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	491	531	93	30-115
93951-97-4	Acenaphthylene-D8	545	531	103	50-150
1719-06-8	Anthracene-D10	556	531	105	50-150
63466-71-7	Benzo(a)pyrene-D12	584	531	110	50-150
81103-79-9	Fluorene-D10	477	531	90	50-150
1718-52-1	Pyrene-D10	517	531	97	50-150
1718-51-0	Terphenyl-D14	547	531	103	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
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Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — Field ID: W-SA1

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.169 g
Final Vol: 1 mL

Lab ID #: 2304065-30
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 91.86%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	13.5	1	U	13.5
91-58-7	2-Chloronaphthalene	13.5	1	U	13.5
91-57-6	2-Methylnaphthalene	13.5	1	U	13.5
83-32-9	Acenaphthene	13.5	1	U	13.5
208-96-8	Acenaphthylene	13.5	1	U	13.5
120-12-7	Anthracene	13.5	1	U	13.5
56-55-3	Benz[a]anthracene	13.5	1	U	13.5
50-32-8	Benzo(a)pyrene	13.5	1	U	13.5
205-99-2	Benzo(b)fluoranthene	13.5	1	U	13.5
191-24-2	Benzo(ghi)perylene	13.5	1	U	13.5
207-08-9	Benzo(k)fluoranthene	13.5	1	U	13.5
86-74-8	**Carbazole**	**5.61**	1	**J**	**13.5**
218-01-9	Chrysene	13.5	1	U	13.5
53-70-3	Dibenzo(a,h)anthracene	13.5	1	U	13.5
132-64-9	Dibenzofuran	13.5	1	U	13.5
206-44-0	Fluoranthene	13.5	1	U	13.5
86-73-7	Fluorene	13.5	1	U	13.5
193-39-5	Indeno(1,2,3-cd)pyrene	13.5	1	U	13.5
91-20-3	Naphthalene	13.5	1	U	13.5
85-01-8	Phenanthrene	13.5	1	U	13.5
129-00-0	Pyrene	13.5	1	U	13.5
483-65-8	Retene	13.5	1	U	13.5

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	408	432	95	30-115
93951-97-4	Acenaphthylene-D8	449	432	104	50-150
1719-06-8	Anthracene-D10	451	432	104	50-150
63466-71-7	Benzo(a)pyrene-D12	467	432	108	50-150
81103-79-9	Fluorene-D10	392	432	91	50-150
1718-52-1	Pyrene-D10	423	432	98	50-150
1718-51-0	Terphenyl-D14	450	432	104	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
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Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling   Field ID: W-SA2

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.257 g
Final Vol: 1 mL

Lab ID #: 2304065-31
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 87.80%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.1	1	U	14.1
91-58-7	2-Chloronaphthalene	14.1	1	U	14.1
91-57-6	2-Methylnaphthalene	14.1	1	U	14.1
83-32-9	Acenaphthene	14.1	1	U	14.1
208-96-8	Acenaphthylene	14.1	1	U	14.1
120-12-7	Anthracene	14.1	1	U	14.1
56-55-3	Benz[a]anthracene	14.1	1	U	14.1
50-32-8	Benzo(a)pyrene	14.1	1	U	14.1
205-99-2	Benzo(b)fluoranthene	14.1	1	U	14.1
191-24-2	Benzo(ghi)perylene	14.1	1	U	14.1
207-08-9	Benzo(k)fluoranthene	14.1	1	U	14.1
86-74-8	**Carbazole**	**5.35**	1	**J**	**14.1**
218-01-9	Chrysene	14.1	1	U	14.1
53-70-3	Dibenzo(a,h)anthracene	14.1	1	U	14.1
132-64-9	Dibenzofuran	14.1	1	U	14.1
206-44-0	Fluoranthene	14.1	1	U	14.1
86-73-7	Fluorene	14.1	1	U	14.1
193-39-5	Indeno(1,2,3-cd)pyrene	14.1	1	U	14.1
91-20-3	Naphthalene	14.1	1	U	14.1
85-01-8	Phenanthrene	14.1	1	U	14.1
129-00-0	Pyrene	14.1	1	U	14.1
483-65-8	Retene	14.1	1	U	14.1

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	397	450	88	30-115
93951-97-4	Acenaphthylene-D8	445	450	99	50-150
1719-06-8	Anthracene-D10	458	450	102	50-150
63466-71-7	Benzo(a)pyrene-D12	478	450	106	50-150
81103-79-9	Fluorene-D10	396	450	88	50-150
1718-52-1	Pyrene-D10	431	450	96	50-150
1718-51-0	Terphenyl-D14	451	450	100	18-137

Authorized by: Karin Bailey   **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling Field ID: W-SA2(D)

Work Order: 2304065
Project Officer: Caron, Rachel
Initial Vol: 20.032 g
Final Vol: 1 mL

Lab ID #: 2304065-32
Collected: 4/11/2023
Prep Method: SW3541
Analysis Method: SW8270E
% Solids: 87.91%

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Dilution	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	14.2	1	U	14.2
91-58-7	2-Chloronaphthalene	14.2	1	U	14.2
91-57-6	2-Methylnaphthalene	14.2	1	U	14.2
83-32-9	Acenaphthene	14.2	1	U	14.2
208-96-8	Acenaphthylene	14.2	1	U	14.2
120-12-7	Anthracene	14.2	1	U	14.2
56-55-3	Benz[a]anthracene	14.2	1	U	14.2
50-32-8	Benzo(a)pyrene	14.2	1	U	14.2
205-99-2	Benzo(b)fluoranthene	14.2	1	U	14.2
191-24-2	Benzo(ghi)perylene	14.2	1	U	14.2
207-08-9	Benzo(k)fluoranthene	14.2	1	U	14.2
86-74-8	**Carbazole**	**5.39**	1	**J**	**14.2**
218-01-9	Chrysene	14.2	1	U	14.2
53-70-3	Dibenzo(a,h)anthracene	14.2	1	U	14.2
132-64-9	Dibenzofuran	14.2	1	U	14.2
206-44-0	Fluoranthene	14.2	1	U	14.2
86-73-7	Fluorene	14.2	1	U	14.2
193-39-5	Indeno(1,2,3-cd)pyrene	14.2	1	U	14.2
91-20-3	Naphthalene	14.2	1	U	14.2
85-01-8	Phenanthrene	14.2	1	U	14.2
129-00-0	Pyrene	14.2	1	U	14.2
483-65-8	Retene	14.2	1	U	14.2

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	403	454	89	30-115
93951-97-4	Acenaphthylene-D8	460	454	101	50-150
1719-06-8	Anthracene-D10	485	454	107	50-150
63466-71-7	Benzo(a)pyrene-D12	504	454	111	50-150
81103-79-9	Fluorene-D10	408	454	90	50-150
1718-52-1	Pyrene-D10	454	454	100	50-150
1718-51-0	Terphenyl-D14	480	454	106	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
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Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling — QC Type : Method Blank

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D169-BLK1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D169-BLK1

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	LLOQ
90-12-0	1-Methylnaphthalene	12.5	U	12.5
91-58-7	2-Chloronaphthalene	12.5	U	12.5
91-57-6	2-Methylnaphthalene	12.5	U	12.5
83-32-9	Acenaphthene	12.5	U	12.5
208-96-8	Acenaphthylene	12.5	U	12.5
120-12-7	Anthracene	12.5	U	12.5
56-55-3	**Benz[a]anthracene**	**2.49**	**J**	**12.5**
50-32-8	Benzo(a)pyrene	12.5	U	12.5
205-99-2	Benzo(b)fluoranthene	12.5	U	12.5
191-24-2	Benzo(ghi)perylene	12.5	U	12.5
207-08-9	Benzo(k)fluoranthene	12.5	U	12.5
86-74-8	Carbazole	12.5	U	12.5
218-01-9	Chrysene	12.5	U	12.5
53-70-3	Dibenzo(a,h)anthracene	12.5	U	12.5
132-64-9	Dibenzofuran	12.5	U	12.5
206-44-0	**Fluoranthene**	**1.66**	**J**	**12.5**
86-73-7	Fluorene	12.5	U	12.5
193-39-5	Indeno(1,2,3-cd)pyrene	12.5	U	12.5
91-20-3	Naphthalene	12.5	U	12.5
85-01-8	Phenanthrene	12.5	U	12.5
129-00-0	Pyrene	12.5	U	12.5
483-65-8	Retene	12.5	U	12.5

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	324	400	81	30-115
93951-97-4	Acenaphthylene-D8	358	400	89	50-150
1719-06-8	Anthracene-D10	371	400	93	50-150
63466-71-7	Benzo(a)pyrene-D12	378	400	94	50-150
81103-79-9	Fluorene-D10	314	400	79	50-150
1718-52-1	Pyrene-D10	336	400	84	50-150
1718-51-0	Terphenyl-D14	364	400	91	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **QC Type : LCS**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D169-BS1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D169-BS1

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: %

Analyte	Result	Spike Level	LLOQ	%Rec	%Rec Limits
1-Methylnaphthalene	397	500	12.5	79	50-150
2-Chloronaphthalene	411	500	12.5	82	50-150
2-Methylnaphthalene	397	500	12.5	79	50-150
Acenaphthene	413	500	12.5	83	50-150
Acenaphthylene	432	500	12.5	86	50-150
Anthracene	449	500	12.5	90	50-150
Benz[a]anthracene	460	500	12.5	92	50-150
Benzo(a)pyrene	443	500	12.5	89	50-150
Benzo(b)fluoranthene	438	500	12.5	88	50-150
Benzo(ghi)perylene	492	500	12.5	98	50-150
Benzo(k)fluoranthene	431	500	12.5	86	50-150
Carbazole	451	500	12.5	90	50-150
Chrysene	441	500	12.5	88	50-150
Dibenzo(a,h)anthracene	444	500	12.5	89	50-150
Dibenzofuran	405	500	12.5	81	50-150
Fluoranthene	448	500	12.5	90	50-150
Fluorene	422	500	12.5	84	50-150
Indeno(1,2,3-cd)pyrene	462	500	12.5	92	50-150
Naphthalene	396	500	12.5	79	50-150
Phenanthrene	422	500	12.5	84	50-150
Pyrene	447	500	12.5	89	50-150
Retene	451	500	12.5	90	50-150

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	316	400	79	30-115
93951-97-4	Acenaphthylene-D8	347	400	87	50-150
1719-06-8	Anthracene-D10	353	400	88	50-150
63466-71-7	Benzo(a)pyrene-D12	370	400	92	50-150
81103-79-9	Fluorene-D10	311	400	78	50-150
1718-52-1	Pyrene-D10	334	400	83	50-150
1718-51-0	Terphenyl-D14	347	400	87	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Report for
Semivolatile Organics by GC/MS

Project: LCB Sampling **QC Type : LCS Dup**

Work Order: Batch QC
Project Officer: Caron, Rachel
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B23D169-BSD1
Prep Method: SW3541
Analysis Method: SW8270E
Source Field ID: B23D169-BSD1

Batch ID: B23D169
Prepared: 4/25/2023
Analyzed: 4/27/2023
Matrix: Sediment/Soil
Units: %

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
1-Methylnaphthalene	347	500	69	14	50-150	40
2-Chloronaphthalene	355	500	71	15	50-150	40
2-Methylnaphthalene	347	500	69	13	50-150	40
Acenaphthene	357	500	71	15	50-150	40
Acenaphthylene	376	500	75	14	50-150	40
Anthracene	394	500	79	13	50-150	40
Benz[a]anthracene	405	500	81	13	50-150	40
Benzo(a)pyrene	383	500	77	15	50-150	40
Benzo(b)fluoranthene	375	500	75	15	50-150	40
Benzo(ghi)perylene	425	500	85	15	50-150	40
Benzo(k)fluoranthene	370	500	74	15	50-150	40
Carbazole	411	500	82	9	50-150	40
Chrysene	378	500	76	15	50-150	40
Dibenzo(a,h)anthracene	388	500	78	13	50-150	40
Dibenzofuran	352	500	70	14	50-150	40
Fluoranthene	414	500	83	8	50-150	40
Fluorene	371	500	74	13	50-150	40
Indeno(1,2,3-cd)pyrene	398	500	80	15	50-150	40
Naphthalene	348	500	70	13	50-150	40
Phenanthrene	368	500	74	14	50-150	40
Pyrene	397	500	79	12	50-150	40
Retene	415	500	83	8	50-150	40

Surrogate Recovery:

CAS#	Analyte	Sample Result	Spike Level	% Rec.	% Rec. Limits
321-60-8	2-Fluorobiphenyl	314	400	79	30-115
93951-97-4	Acenaphthylene-D8	353	400	88	50-150
1719-06-8	Anthracene-D10	364	400	91	50-150
63466-71-7	Benzo(a)pyrene-D12	369	400	92	50-150
81103-79-9	Fluorene-D10	320	400	80	50-150
1718-52-1	Pyrene-D10	347	400	87	50-150
1718-51-0	Terphenyl-D14	357	400	89	18-137

Authorized by: Karin Bailey **Release Date:** 5/2/2023

Appendix A
Sample Correlation Table

Batch ID: B23D144 **Prep Method:** SW3541

Prepared: 4/21/2023 **Analysis Method:** SW8270E

Field ID	MEL ID
KJ-SA1	2304065-01
KJ-SA2	2304065-02
HE-SA1	2304065-04
HE-SA2	2304065-05
B-SA1	2304065-07
B-SA2	2304065-08
OG-SA1	2304065-09
OG-SA2	2304065-10
T-SA1	2304065-11
T-SA2	2304065-12
TP-SA1	2304065-13
TP-SA2	2304065-14
BM-SA1	2304065-15
BM-SA2	2304065-16
BM-SA2(D)	2304065-17
GG-SA1	2304065-18
GG-SA2	2304065-19
GRP-SA1	2304065-20
GRP-SA2	2304065-21
EP-SA1	2304065-22
Method Blank	B23D144-BLK1
LCS	B23D144-BS1
LCS Dup	B23D144-BSD1

Appendix A
Sample Correlation Table

Batch ID: B23D169 **Prep Method:** SW3541

Prepared: 4/25/2023 **Analysis Method:** SW8270E

Field ID	MEL ID
EP-SA2	2304065-23
PSV-SA1	2304065-24
PSV-SA2	2304065-25
SLS-SA1	2304065-26
SLS-SA2	2304065-27
AT-SA1	2304065-28
AT-SA2	2304065-29
W-SA1	2304065-30
W-SA2	2304065-31
W-SA2(D)	2304065-32
Method Blank	B23D169-BLK1
LCS	B23D169-BS1
LCS Dup	B23D169-BSD1

Appendix B
Manual Qualification Table

WO: QC	**Analysis:** PAH

No manual qualifiers were added to the samples or batch QC.

Appendix C
Data Qualifier Definitions

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

Appendix D
QC Exceptions Report

Lab ID	Analyte	Exception
B23D144-BLK1	Carbazole	Blank > MDL

QC Exceptions determined using unrounded QC results but are reported as integers throughout this analytical report.

Appendix E
Initial Calibration Exceptions Report

Calibration ID: B3D2601 **Analysis:** PAH

LabNumber	Analyte	QC Exception

No ICAL exceptions.

Appendix F

Metals Analytical Results

Manchester Environmental Laboratory

7411 Beach Drive E, Port Orchard, Washington 98366

Case Narrative - Metals

May 16, 2023

Project: LCB Sampling

Work Order: 2304065

Project Manager: Caron, Rachel

By: Heidi Chuhran

Summary

The laboratory analyzed the samples for trace metals. The analyses requested were evaluated by established regulatory quality assurance guidelines.

All results were reported without qualifications.

Sample Information

The samples were received at the Manchester Laboratory on 4/13/2023. The coolers were received within the proper temperature range of 0°C - 6°C.The samples were received in good condition. Thirty-two samples were received and assigned laboratory identification numbers 01 to 32.

Holding Times

The laboratory performed the analyses within their hold times.

Other Quality Issues

NA

Exception Report

NA

U - The analyte was not detected at or above the reported result.

bold - The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.)

Please call Heidi Chuhran at (360) 871-8826 to further discuss this project.

cc: Project File

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Silver

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	**"KJ-SA1"**	**0.056**		1	0.050	04/11/23	04/19/23
2304065-02	**"KJ-SA2"**	**0.051**		1	0.050	04/11/23	04/19/23
2304065-03	**"KJ-SA2(D)"**	**0.054**		1	0.050	04/11/23	04/19/23
2304065-04	"HE-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-05	"HE-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-06	"HE-SA2(D)"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-07	**"B-SA1"**	**0.051**		1	0.050	04/11/23	04/19/23
2304065-08	**"B-SA2"**	**0.055**		1	0.050	04/11/23	04/19/23
2304065-09	**"OG-SA1"**	**0.056**		1	0.050	04/11/23	04/19/23
2304065-10	**"OG-SA2"**	**0.052**		1	0.050	04/11/23	04/19/23
2304065-11	**"T-SA1"**	**0.053**		1	0.050	04/11/23	04/19/23
2304065-12	"T-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-13	**"TP-SA1"**	**0.060**		1	0.050	04/11/23	04/19/23
2304065-14	**"TP-SA2"**	**0.068**		1	0.050	04/11/23	04/19/23
2304065-15	**"BM-SA1"**	**0.063**		1	0.050	04/11/23	04/19/23
2304065-16	**"BM-SA2"**	**0.054**		1	0.050	04/11/23	04/19/23
2304065-17	**"BM-SA2(D)"**	**0.053**		1	0.050	04/11/23	04/19/23
2304065-18	"GG-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-19	"GG-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-20	"GRP-SA1"	0.050	U	1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	41.0	40.0			103	85-115		
B23D102-BSD1	LCS Dup	41.4	40.0			104	85-115	0.9	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Silver

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-22	"EP-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-23	"EP-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-24	"PSV-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-25	"PSV-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-26	"SLS-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-27	"SLS-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-28	**"AT-SA1"**	**0.059**		1	0.050	04/11/23	04/19/23
2304065-29	**"AT-SA2"**	**0.051**		1	0.050	04/11/23	04/19/23
2304065-30	"W-SA1"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-31	"W-SA2"	0.050	U	1	0.050	04/11/23	04/19/23
2304065-32	"W-SA2(D)"	0.050	U	1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	40.4	40.0			101	85-115		
B23D103-BSD1	LCS Dup	41.0	40.0			102	85-115	1	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Arsenic

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	29.7		1	0.050	04/11/23	04/19/23
2304065-02	"KJ-SA2"	28.4		1	0.050	04/11/23	04/19/23
2304065-03	"KJ-SA2(D)"	28.4		1	0.050	04/11/23	04/19/23
2304065-04	"HE-SA1"	6.04		1	0.050	04/11/23	04/19/23
2304065-05	"HE-SA2"	7.22		1	0.050	04/11/23	04/19/23
2304065-06	"HE-SA2(D)"	6.84		1	0.050	04/11/23	04/19/23
2304065-07	"B-SA1"	4.69		1	0.050	04/11/23	04/19/23
2304065-08	"B-SA2"	4.37		1	0.050	04/11/23	04/19/23
2304065-09	"OG-SA1"	8.01		1	0.050	04/11/23	04/19/23
2304065-10	"OG-SA2"	6.89		1	0.050	04/11/23	04/19/23
2304065-11	"T-SA1"	3.53		1	0.050	04/11/23	04/19/23
2304065-12	"T-SA2"	4.75		1	0.050	04/11/23	04/19/23
2304065-13	"TP-SA1"	24.7		1	0.050	04/11/23	04/19/23
2304065-14	"TP-SA2"	29.1		1	0.050	04/11/23	04/19/23
2304065-15	"BM-SA1"	5.56		1	0.050	04/11/23	04/19/23
2304065-16	"BM-SA2"	8.30		1	0.050	04/11/23	04/19/23
2304065-17	"BM-SA2(D)"	8.52		1	0.050	04/11/23	04/19/23
2304065-18	"GG-SA1"	41.1		1	0.050	04/11/23	04/19/23
2304065-19	"GG-SA2"	19.5		1	0.050	04/11/23	04/19/23
2304065-20	"GRP-SA1"	13.6		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	40.1	40.0			100	85-115		
B23D102-BSD1	LCS Dup	39.8	40.0			100	85-115	0.8	20

Authorized by: Heidi Chuhran Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Arsenic

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	11.5		1	0.050	04/11/23	04/19/23
2304065-22	"EP-SA1"	40.6		1	0.050	04/11/23	04/19/23
2304065-23	"EP-SA2"	42.1		1	0.050	04/11/23	04/19/23
2304065-24	"PSV-SA1"	28.7		1	0.050	04/11/23	04/19/23
2304065-25	"PSV-SA2"	30.2		1	0.050	04/11/23	04/19/23
2304065-26	"SLS-SA1"	24.6		1	0.050	04/11/23	04/19/23
2304065-27	"SLS-SA2"	23.0		1	0.050	04/11/23	04/19/23
2304065-28	"AT-SA1"	96.4		10	0.497	04/11/23	04/21/23
2304065-29	"AT-SA2"	74.2		10	0.495	04/11/23	04/21/23
2304065-30	"W-SA1"	17.0		1	0.050	04/11/23	04/19/23
2304065-31	"W-SA2"	17.5		1	0.050	04/11/23	04/19/23
2304065-32	"W-SA2(D)"	22.6		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	39.9	40.0			100	85-115		
B23D103-BSD1	LCS Dup	40.2	40.0			100	85-115	0.6	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Barium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	132		10	0.498	04/11/23	04/20/23
2304065-02	"KJ-SA2"	126		10	0.500	04/11/23	04/20/23
2304065-03	"KJ-SA2(D)"	131		10	0.499	04/11/23	04/20/23
2304065-04	"HE-SA1"	106		10	0.498	04/11/23	04/20/23
2304065-05	"HE-SA2"	87.0		10	0.498	04/11/23	04/20/23
2304065-06	"HE-SA2(D)"	84.6		10	0.494	04/11/23	04/20/23
2304065-07	"B-SA1"	123		10	0.498	04/11/23	04/20/23
2304065-08	"B-SA2"	125		10	0.493	04/11/23	04/20/23
2304065-09	"OG-SA1"	86.9		10	0.494	04/11/23	04/20/23
2304065-10	"OG-SA2"	101		10	0.499	04/11/23	04/20/23
2304065-11	"T-SA1"	149		10	0.499	04/11/23	04/20/23
2304065-12	"T-SA2"	124		10	0.496	04/11/23	04/20/23
2304065-13	"TP-SA1"	106		10	0.495	04/11/23	04/20/23
2304065-14	"TP-SA2"	117		10	0.493	04/11/23	04/20/23
2304065-15	"BM-SA1"	98.5		10	0.499	04/11/23	04/20/23
2304065-16	"BM-SA2"	94.3		10	0.492	04/11/23	04/20/23
2304065-17	"BM-SA2(D)"	95.2		10	0.498	04/11/23	04/20/23
2304065-18	"GG-SA1"	74.5		10	0.498	04/11/23	04/20/23
2304065-19	"GG-SA2"	81.3		10	0.495	04/11/23	04/20/23
2304065-20	"GRP-SA1"	70.9		10	0.494	04/11/23	04/20/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	40.5	40.0			101	85-115		
B23D102-BSD1	LCS Dup	40.3	40.0			101	85-115	0.5	20

Authorized by: Heidi Chuhran Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Barium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	78.7		10	0.491	04/11/23	04/20/23
2304065-22	"EP-SA1"	95.9		10	0.495	04/11/23	04/20/23
2304065-23	"EP-SA2"	97.2		10	0.500	04/11/23	04/20/23
2304065-24	"PSV-SA1"	111		10	0.495	04/11/23	04/20/23
2304065-25	"PSV-SA2"	113		10	0.496	04/11/23	04/20/23
2304065-26	"SLS-SA1"	75.8		10	0.492	04/11/23	04/20/23
2304065-27	"SLS-SA2"	74.2		10	0.496	04/11/23	04/20/23
2304065-28	"AT-SA1"	147		10	0.497	04/11/23	04/20/23
2304065-29	"AT-SA2"	112		10	0.495	04/11/23	04/20/23
2304065-30	"W-SA1"	49.1		10	0.491	04/11/23	04/20/23
2304065-31	"W-SA2"	59.7		10	0.496	04/11/23	04/20/23
2304065-32	"W-SA2(D)"	55.5		10	0.491	04/11/23	04/20/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	40.3	40.0			101	85-115		
B23D103-BSD1	LCS Dup	40.5	40.0			101	85-115	0.5	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Cadmium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	0.196		1	0.050	04/11/23	04/19/23
2304065-02	"KJ-SA2"	0.210		1	0.050	04/11/23	04/19/23
2304065-03	"KJ-SA2(D)"	0.209		1	0.050	04/11/23	04/19/23
2304065-04	"HE-SA1"	0.196		1	0.050	04/11/23	04/19/23
2304065-05	"HE-SA2"	0.154		1	0.050	04/11/23	04/19/23
2304065-06	"HE-SA2(D)"	0.158		1	0.050	04/11/23	04/19/23
2304065-07	"B-SA1"	0.190		1	0.050	04/11/23	04/19/23
2304065-08	"B-SA2"	0.202		1	0.050	04/11/23	04/19/23
2304065-09	"OG-SA1"	0.170		1	0.050	04/11/23	04/19/23
2304065-10	"OG-SA2"	0.174		1	0.050	04/11/23	04/19/23
2304065-11	"T-SA1"	0.194		1	0.050	04/11/23	04/19/23
2304065-12	"T-SA2"	0.222		1	0.050	04/11/23	04/19/23
2304065-13	"TP-SA1"	0.161		1	0.050	04/11/23	04/19/23
2304065-14	"TP-SA2"	0.138		1	0.050	04/11/23	04/19/23
2304065-15	"BM-SA1"	0.136		1	0.050	04/11/23	04/19/23
2304065-16	"BM-SA2"	0.162		1	0.050	04/11/23	04/19/23
2304065-17	"BM-SA2(D)"	0.150		1	0.050	04/11/23	04/19/23
2304065-18	"GG-SA1"	0.173		1	0.050	04/11/23	04/19/23
2304065-19	"GG-SA2"	0.159		1	0.050	04/11/23	04/19/23
2304065-20	"GRP-SA1"	0.135		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	40.5	40.0			101	85-115		
B23D102-BSD1	LCS Dup	40.8	40.0			102	85-115	0.7	20

Authorized by: Heidi Chuhran Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Cadmium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	0.152		1	0.050	04/11/23	04/19/23
2304065-22	"EP-SA1"	0.169		1	0.050	04/11/23	04/19/23
2304065-23	"EP-SA2"	0.195		1	0.050	04/11/23	04/19/23
2304065-24	"PSV-SA1"	0.178		1	0.050	04/11/23	04/19/23
2304065-25	"PSV-SA2"	0.392		1	0.050	04/11/23	04/19/23
2304065-26	"SLS-SA1"	0.125		1	0.050	04/11/23	04/19/23
2304065-27	"SLS-SA2"	0.176		1	0.050	04/11/23	04/19/23
2304065-28	"AT-SA1"	0.296		1	0.050	04/11/23	04/19/23
2304065-29	"AT-SA2"	0.249		1	0.050	04/11/23	04/19/23
2304065-30	"W-SA1"	0.080		1	0.050	04/11/23	04/19/23
2304065-31	"W-SA2"	0.103		1	0.050	04/11/23	04/19/23
2304065-32	"W-SA2(D)"	0.114		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	39.8	40.0			99	85-115		
B23D103-BSD1	LCS Dup	40.5	40.0			101	85-115	2	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Chromium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	16.6		1	0.050	04/11/23	04/19/23
2304065-02	"KJ-SA2"	16.5		1	0.050	04/11/23	04/19/23
2304065-03	"KJ-SA2(D)"	17.2		1	0.050	04/11/23	04/19/23
2304065-04	"HE-SA1"	18.4		1	0.050	04/11/23	04/19/23
2304065-05	"HE-SA2"	18.3		1	0.050	04/11/23	04/19/23
2304065-06	"HE-SA2(D)"	18.1		1	0.050	04/11/23	04/19/23
2304065-07	"B-SA1"	18.4		1	0.050	04/11/23	04/19/23
2304065-08	"B-SA2"	21.2		1	0.050	04/11/23	04/19/23
2304065-09	"OG-SA1"	19.1		1	0.050	04/11/23	04/19/23
2304065-10	"OG-SA2"	20.0		1	0.050	04/11/23	04/19/23
2304065-11	"T-SA1"	19.1		1	0.050	04/11/23	04/19/23
2304065-12	"T-SA2"	17.0		1	0.050	04/11/23	04/19/23
2304065-13	"TP-SA1"	19.7		1	0.050	04/11/23	04/19/23
2304065-14	"TP-SA2"	20.6		1	0.050	04/11/23	04/19/23
2304065-15	"BM-SA1"	20.5		1	0.050	04/11/23	04/19/23
2304065-16	"BM-SA2"	19.0		1	0.050	04/11/23	04/19/23
2304065-17	"BM-SA2(D)"	18.8		1	0.050	04/11/23	04/19/23
2304065-18	"GG-SA1"	7.81		1	0.050	04/11/23	04/19/23
2304065-19	"GG-SA2"	8.24		1	0.050	04/11/23	04/19/23
2304065-20	"GRP-SA1"	7.95		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	39.7	40.0			99	85-115		
B23D102-BSD1	LCS Dup	39.8	40.0			99	85-115	0.2	20

Authorized by: Heidi Chuhran Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Chromium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	8.27		1	0.050	04/11/23	04/19/23
2304065-22	"EP-SA1"	15.8		1	0.050	04/11/23	04/19/23
2304065-23	"EP-SA2"	15.4		1	0.050	04/11/23	04/19/23
2304065-24	"PSV-SA1"	8.97		1	0.050	04/11/23	04/19/23
2304065-25	"PSV-SA2"	9.56		1	0.050	04/11/23	04/19/23
2304065-26	"SLS-SA1"	8.35		1	0.050	04/11/23	04/19/23
2304065-27	"SLS-SA2"	8.61		1	0.050	04/11/23	04/19/23
2304065-28	"AT-SA1"	11.6		1	0.050	04/11/23	04/19/23
2304065-29	"AT-SA2"	10.8		1	0.050	04/11/23	04/19/23
2304065-30	"W-SA1"	6.36		1	0.050	04/11/23	04/19/23
2304065-31	"W-SA2"	6.86		1	0.050	04/11/23	04/19/23
2304065-32	"W-SA2(D)"	5.88		1	0.050	04/11/23	04/19/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	39.9	40.0			100	85-115		
B23D103-BSD1	LCS Dup	40.0	40.0			100	85-115	0.1	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Lead

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	51.6		10	0.498	04/11/23	04/20/23
2304065-02	"KJ-SA2"	112		10	0.500	04/11/23	04/20/23
2304065-03	"KJ-SA2(D)"	39.3		10	0.499	04/11/23	04/20/23
2304065-04	"HE-SA1"	6.12		10	0.498	04/11/23	04/20/23
2304065-05	"HE-SA2"	5.49		10	0.498	04/11/23	04/20/23
2304065-06	"HE-SA2(D)"	5.87		10	0.494	04/11/23	04/20/23
2304065-07	"B-SA1"	6.68		10	0.498	04/11/23	04/20/23
2304065-08	"B-SA2"	6.64		10	0.493	04/11/23	04/20/23
2304065-09	"OG-SA1"	4.97		10	0.494	04/11/23	04/20/23
2304065-10	"OG-SA2"	5.10		10	0.499	04/11/23	04/20/23
2304065-11	"T-SA1"	6.18		10	0.499	04/11/23	04/20/23
2304065-12	"T-SA2"	6.32		10	0.496	04/11/23	04/20/23
2304065-13	"TP-SA1"	256		10	0.495	04/11/23	04/20/23
2304065-14	"TP-SA2"	95.2		10	0.493	04/11/23	04/20/23
2304065-15	"BM-SA1"	5.12		10	0.499	04/11/23	04/20/23
2304065-16	"BM-SA2"	7.61		10	0.492	04/11/23	04/20/23
2304065-17	"BM-SA2(D)"	7.35		10	0.498	04/11/23	04/20/23
2304065-18	"GG-SA1"	530		10	0.498	04/11/23	04/20/23
2304065-19	"GG-SA2"	293		10	0.495	04/11/23	04/20/23
2304065-20	"GRP-SA1"	210		10	0.494	04/11/23	04/20/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	0.011

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	40.6	40.0			101	85-115		
B23D102-BSD1	LCS Dup	41.3	40.0			103	85-115	2	20

Authorized by: Heidi Chuhran   Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Lead

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	210		10	0.491	04/11/23	04/20/23
2304065-22	"EP-SA1"	280		10	0.495	04/11/23	04/20/23
2304065-23	"EP-SA2"	438		10	0.500	04/11/23	04/20/23
2304065-24	"PSV-SA1"	572		10	0.495	04/11/23	04/20/23
2304065-25	"PSV-SA2"	510		10	0.496	04/11/23	04/20/23
2304065-26	"SLS-SA1"	221		10	0.492	04/11/23	04/20/23
2304065-27	"SLS-SA2"	271		10	0.496	04/11/23	04/20/23
2304065-28	"AT-SA1"	956		10	0.497	04/11/23	04/20/23
2304065-29	"AT-SA2"	774		10	0.495	04/11/23	04/20/23
2304065-30	"W-SA1"	244		10	0.491	04/11/23	04/20/23
2304065-31	"W-SA2"	218		10	0.496	04/11/23	04/20/23
2304065-32	"W-SA2(D)"	376		10	0.491	04/11/23	04/20/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	0.011

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	40.6	40.0			101	85-115		
B23D103-BSD1	LCS Dup	40.6	40.0			102	85-115	0.1	20

Authorized by: Heidi Chuhran Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Selenium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D102

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-01	"KJ-SA1"	0.086		1	0.050	04/11/23	04/20/23
2304065-02	"KJ-SA2"	0.071		1	0.050	04/11/23	04/20/23
2304065-03	"KJ-SA2(D)"	0.068		1	0.050	04/11/23	04/20/23
2304065-04	"HE-SA1"	0.069		1	0.050	04/11/23	04/20/23
2304065-05	"HE-SA2"	0.079		1	0.050	04/11/23	04/20/23
2304065-06	"HE-SA2(D)"	0.075		1	0.050	04/11/23	04/20/23
2304065-07	"B-SA1"	0.074		1	0.050	04/11/23	04/20/23
2304065-08	"B-SA2"	0.075		1	0.050	04/11/23	04/20/23
2304065-09	"OG-SA1"	0.068		1	0.050	04/11/23	04/20/23
2304065-10	"OG-SA2"	0.070		1	0.050	04/11/23	04/20/23
2304065-11	"T-SA1"	0.060		1	0.050	04/11/23	04/20/23
2304065-12	"T-SA2"	0.080		1	0.050	04/11/23	04/20/23
2304065-13	"TP-SA1"	0.078		1	0.050	04/11/23	04/20/23
2304065-14	"TP-SA2"	0.077		1	0.050	04/11/23	04/20/23
2304065-15	"BM-SA1"	0.069		1	0.050	04/11/23	04/20/23
2304065-16	"BM-SA2"	0.075		1	0.050	04/11/23	04/20/23
2304065-17	"BM-SA2(D)"	0.077		1	0.050	04/11/23	04/20/23
2304065-18	"GG-SA1"	0.134		1	0.050	04/11/23	04/20/23
2304065-19	"GG-SA2"	0.149		1	0.050	04/11/23	04/20/23
2304065-20	"GRP-SA1"	0.149		1	0.050	04/11/23	04/20/23

QC Results for Batch ID: B23D102

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D102-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D102-BS1	LCS	39.3	40.0			98	85-115		
B23D102-BSD1	LCS Dup	39.4	40.0			99	85-115	0.4	20

Authorized by: Heidi Chuhran

Release Date: 5/16/2023

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

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Selenium

Prep Method: SW3050B
Prepared: 04/18/23
Batch ID: B23D103

Analysis Method: SW6020B
Matrix: Sediment/Soil
Units: mg/Kg dw

Sample #	Sample ID	Result	Qualifier	Dilution	LLOQ	Collected	Analyzed
2304065-21	"GRP-SA2"	0.219		1	0.050	04/11/23	04/20/23
2304065-22	"EP-SA1"	0.139		1	0.050	04/11/23	04/20/23
2304065-23	"EP-SA2"	0.150		1	0.050	04/11/23	04/20/23
2304065-24	"PSV-SA1"	0.141		1	0.050	04/11/23	04/20/23
2304065-25	"PSV-SA2"	0.117		1	0.050	04/11/23	04/20/23
2304065-26	"SLS-SA1"	0.121		1	0.050	04/11/23	04/20/23
2304065-27	"SLS-SA2"	0.167		1	0.050	04/11/23	04/20/23
2304065-28	"AT-SA1"	0.173		1	0.050	04/11/23	04/20/23
2304065-29	"AT-SA2"	0.196		1	0.050	04/11/23	04/20/23
2304065-30	"W-SA1"	0.081		1	0.050	04/11/23	04/20/23
2304065-31	"W-SA2"	0.136		1	0.050	04/11/23	04/20/23
2304065-32	"W-SA2(D)"	0.138		1	0.050	04/11/23	04/20/23

QC Results for Batch ID: B23D103

Method Blank	Sample ID	Result	Qualifer	LLOQ	MDL
B23D103-BLK1	Blank	0.100	U	0.100	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D103-BS1	LCS	39.4	40.0			98	85-115		
B23D103-BSD1	LCS Dup	39.7	40.0			99	85-115	0.8	20

Authorized by: Heidi Chuhran **Release Date:** 5/16/2023

Appendix G

Percent Solids Analytical Results

Manchester Environmental Laboratory
7411 Beach Drive E, Port Orchard, Washington 98366

Case Narrative – General Chemistry

May 15, 2023

Project: LCB Sampling

Work Order: 2304065

Project Manager: Caron, Rachel

By: Heidi Chuhran

Summary

The laboratory performed general chemistry analysis on the samples. The analysis requested was evaluated by established regulatory quality assurance guidelines.

The result was reported without qualification.

Sample Information

The samples were received at the Manchester Laboratory on 4/12/2023. The coolers were received within the proper temperature range of 0°C - 6°C. The samples were received in good condition. Forty nine samples were received and assigned laboratory identification numbers 01 to 49.

Holding Times

The laboratory performed the analyses within their hold times.

Other Quality Assurance Measures and Issues

NA

Exception Report

NA

U - The analyte was not detected at or above the reported result.

bold - The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.)

Please call Heidi Chuhran at (360) 871-8826 to further discuss this project.

cc: Project File

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Analysis Report for
Percent Solids

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Solids

Method: SM2540G
Batch ID: B23D082
Prepared: 04/13/23

Matrix: Sediment/Soil
Units: %

Sample #	Sample ID	Result	Qualifier	RL	MDL	Collected	Analyzed
2304065-01	"KJ-SA1"	79.6		0.001		4/11/2023	04/13/23
2304065-02	"KJ-SA2"	78.5		0.001		4/11/2023	04/13/23
2304065-03	"KJ-SA2(D)"	78.5		0.001		4/11/2023	04/13/23
2304065-04	"HE-SA1"	85.4		0.001		4/11/2023	04/13/23
2304065-05	"HE-SA2"	86.2		0.001		4/11/2023	04/13/23
2304065-06	"HE-SA2(D)"	85.4		0.001		4/11/2023	04/13/23
2304065-07	"B-SA1"	80.9		0.001		4/11/2023	04/13/23
2304065-08	"B-SA2"	78.9		0.001		4/11/2023	04/13/23
2304065-09	"OG-SA1"	88.2		0.001		4/11/2023	04/13/23
2304065-10	"OG-SA2"	86.8		0.001		4/11/2023	04/13/23
2304065-11	"T-SA1"	78.2		0.001		4/11/2023	04/13/23
2304065-12	"T-SA2"	77.1		0.001		4/11/2023	04/13/23
2304065-13	"TP-SA1"	88.6		0.001		4/11/2023	04/13/23
2304065-14	"TP-SA2"	88.8		0.001		4/11/2023	04/13/23
2304065-15	"BM-SA1"	88.4		0.001		4/11/2023	04/13/23
2304065-16	"BM-SA2"	86.6		0.001		4/11/2023	04/13/23
2304065-17	"BM-SA2(D)"	87.4		0.001		4/11/2023	04/13/23
2304065-18	"GG-SA1"	80.5		0.001		4/11/2023	04/13/23
2304065-19	"GG-SA2"	80.8		0.001		4/11/2023	04/13/23
2304065-20	"GRP-SA1"	87.3		0.001		4/11/2023	04/13/23
2304065-21	"GRP-SA2"	86.1		0.001		4/11/2023	04/13/23
2304065-22	"EP-SA1"	82.9		0.001		4/11/2023	04/13/23
2304065-23	"EP-SA2"	84.3		0.001		4/11/2023	04/13/23
2304065-24	"PSV-SA1"	82.2		0.001		4/11/2023	04/13/23
2304065-25	"PSV-SA2"	81.0		0.001		4/11/2023	04/13/23
2304065-26	"SLS-SA1"	80.8		0.001		4/11/2023	04/13/23
2304065-27	"SLS-SA2"	80.0		0.001		4/11/2023	04/13/23
2304065-28	"AT-SA1"	77.1		0.001		4/11/2023	04/13/23
2304065-29	"AT-SA2"	75.0		0.001		4/11/2023	04/13/23
2304065-30	"W-SA1"	91.9		0.001		4/11/2023	04/13/23
2304065-31	"W-SA2"	87.8		0.001		4/11/2023	04/13/23
2304065-32	"W-SA2(D)"	87.9		0.001		4/11/2023	04/13/23
2304065-33	"HE-SA1"	85.4		0.001		4/11/2023	04/13/23
2304065-34	"HE-SA2"	86.2		0.001		4/11/2023	04/13/23
2304065-35	"HE-SA2(D)"	85.4		0.001		4/11/2023	04/13/23
2304065-36	"T-SA1"	78.2		0.001		4/11/2023	04/13/23
2304065-37	"T-SA2"	77.1		0.001		4/11/2023	04/13/23
2304065-38	"OG-SA1"	88.2		0.001		4/11/2023	04/13/23
2304065-39	"OG-SA2"	86.8		0.001		4/11/2023	04/13/23
2304065-40	"B-SA1"	80.9		0.001		4/11/2023	04/13/23
2304065-41	"B-SA2"	78.9		0.001		4/11/2023	04/13/23
2304065-42	"KJ-SA1"	79.6		0.001		4/11/2023	04/13/23
2304065-43	"KJ-SA2"	78.5		0.001		4/11/2023	04/13/23
2304065-44	"KJ-SA2(D)"	78.5		0.001		4/11/2023	04/13/23
2304065-45	"BM-SA1"	88.4		0.001		4/11/2023	04/13/23

Authorized by: Heidi Chuhran   Release Date: 5/15/2023

Washington State Department of Ecology
Manchester Environmental Laboratory
Final Analysis Report for
Percent Solids

Project Name: LCB Sampling

Project Officer: Caron, Rachel
Work Order: 2304065
Analyte: Solids

Method: SM2540G
Batch ID: B23D082
Prepared: 04/13/23

Matrix: Sediment/Soil
Units: %

Sample #	Sample ID	Result	Qualifier	RL	MDL	Collected	Analyzed
2304065-46	"BM-SA2"	86.6		0.001		4/11/2023	04/13/23
2304065-47	"BM-SA2(D)"	87.4		0.001		4/11/2023	04/13/23
2304065-48	"TP-SA1"	88.6		0.001		4/11/2023	04/13/23
2304065-49	"TP-SA2"	88.8		0.001		4/11/2023	04/13/23

QC Results for Batch ID: B23D082

Method Blank	Sample ID	Result	Qualifer	RL	MDL
B23D082-BLK1	Blank	0.001	U	0.001	
B23D082-BLK2	Blank	0.001	U	0.001	

Sample #	QC Sample	Result	Spike Level	Source Sample	Source Result	%Rec	%Rec Limits	RPD	RPD Limit
B23D082-DUP2	Duplicate	88.7		2304065-14	88.8			0.1	20
B23D082-DUP1	Duplicate	85.1		2304065-04	85.4			0.3	20
B23D082-DUP3	Duplicate	80.2		2304065-27	80.0			0.1	20

Authorized by: Heidi Chuhran Release Date: 5/15/2023

Appendix H

Memorandum: *Pesticide Protective Levels for the Food Consumption Pathway*

Memorandum

Date: April 04, 2023

To: Arthur Buchan, Toxicologist – CRO

From: Andy Kallus, Toxicologist Ask
Policy and Technical Support Unit
Toxics Cleanup Program

Subject: Pesticide Protective Levels for the Food Consumption Pathway

EXECUTIVE SUMMARY

Based on concerns raised by the Washington State Liquor and Cannabis Board (LCB), preliminary cleanup levels (PCLs) were developed for DDD, DDE, and DDT in soil and plant tissue that are protective of the homegrown food consumption pathway for children and adults under a residential scenario (i.e., for households that garden). Two general categories of garden produce were addressed: leafy vegetables and fruiting vegetables. LCB has reported that their action level is 0.1 ppm (or mg/kg) in cannabis plant tissue. This action level was applied as the exposure point concentration (EPC) in plant tissue as part of the risk evaluation and development of PCLs. Chemical-specific uptake factors (a.k.a., biotransfer factors) that predict the bioconcentration of pesticides (i.e., DDD, DDE, and DDT) in garden homegrown produce grown in contaminated soil were used to derive PCLs for soil (see Attachment **1**). Soil PCLs were derived by dividing the plant tissue PCL by the chemical-specific soil to plant uptake factor. Results of the risk evaluation for the residential consumption of homegrown produce pathway are summarized below.

Cancer Risk Results and PCLs

Application of 0.1 mg/kg as the EPC in plant tissue results in cancer risks that exceed the Model Toxics Control Act (MTCA) Method B threshold of 1×10^{-6} (same as 1E-06) or approximately one excess cancer case in a population of 1,000,000 individuals. This risk threshold was exceeded for all chemicals of concern (i.e., COCs – DDD, DDE, and DDT) for both child and adult receptors. In addition, the cumulative risk from all the COCs generated a cancer risk in excess of the MTCA Method B threshold of 1E-05 or one excess cancer case in a population of 100,000 individuals.

The PCLs provided in the table below are for cancer effects based on achieving a 1E-06 risk for each COC. Adjustments for cumulative cancer risk are not needed because the total risk from three COCs at a 1E-06 risk is less than 1E-05.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.0092	14	0.027	42
DDE	0.0065	19	0.019	57
DDT	0.0065	33	0.019	97

<u>Notes:</u>

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] These plant tissue PCLs apply if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

Noncancer Effects and PCLs

The hazard indices (HI) generated for the future child and adult resident do not exceed the MTCA threshold of 1. The HI for the future child and adult is 1 and 0.6, respectively.

PCLs for noncancer effects are based on a total HI of 1 for the summation of hazard quotients (HQs) for DDD, DDE, and DDT (these all effect the same target organ – liver). The noncancer PCLs presented below are based on exposure to the future child resident which generated the highest HI.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.1	160	0.32	500
DDE	0.1	300	0.32	960
DDT	0.1	510	0.32	1600

<u>Notes:</u>

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] The plant tissue PCL of 0.32 mg/kg applies if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

1. BACKGROUND AND SCOPE

The issue of the pesticide DDT detected in plant tissue was reported by the Washington State Liquor and Cannabis Board (LCB) on March 10, 2023, via an ERTS[1] report. According to the ERTS report, concentrations of DDT have been detected above the LCB action level of 0.1 parts per million (ppm or mg/kg) in cannabis foliage samples from every producer located in the region around Kibble Junction in Brewster, Washington.

This memorandum has been prepared at the request of TCP's Central Regional Office (CRO) as a first step in responding to concerns raised by the LCB over pesticide levels reported in cannabis foliage. It is intended to provide technical support for the development of soil and plant tissue levels (both cancer and non-cancer based) for certain pesticides (DDD, DDE, and DDT) that are protective of homegrown food consumption for above-ground leafy and fruiting vegetables. The memorandum describes the process for determining such values and provides preliminary cleanup levels (PCLs) based on reasonable maximum exposure assumptions.

2. SOIL CLEANUP LEVELS UNDER MTCA

Under MTCA, soil cleanup levels may be derived based on two types of land use – unrestricted and industrial land use. Unless a site qualifies as an industrial property, soil cleanup levels must be based on unrestricted land use. Public access to industrial properties is generally prohibited along with growing or raising food crops. *See* WAC 173-340-745(1)(a)(i). Therefore, an exposure scenario such as one that involves raising an agricultural crop for human use requires the development of cleanup levels that are protective of unrestricted land use.

Pathways that are typically evaluated for the development of soil cleanup levels for unrestricted land use include human direct contact, inhalation of vapors (for volatile chemicals), terrestrial ecological exposure (plants and animals), and soil leaching to groundwater. However, this is not considered to be a complete list of all soil exposure pathways, and Ecology may require evaluation of exposure through other pathways on a site-specific basis when necessary to protect human health and the environment (e.g., potential food chain contamination pathway). *See* WAC 173-340-740(1)(c)(i). The focus of this memo is the development of PCLs for DDD, DDE, and DDT that are protective of the human food chain pathway (i.e., consumption of homegrown produce).

3. INGESTION OF HOMEGROWN PRODUCE PATHWAY

The soil exposure pathway evaluated in this memo is based on hypothetical future residential (child and adult) exposure to pesticides (DDD, DDE, DDT) in soil via ingestion of above-ground homegrown produce (i.e., leafy and fruiting vegetables). This scenario is not intended to be a direct proxy for characterizing exposure and risk to pesticides in cannabis via ingestion but may provide a conservative approach to evaluating exposure to these pesticides in soil and plant tissue via human consumption.

Two general categories of garden produce were addressed: leafy vegetables[2] and fruiting vegetables[3]. In absence of plant tissue sample data, the LCB action level 0.1 mg/kg was applied as the exposure

[1] ERTS is Ecology's Environmental Report Tracking System.
[2] Examples of leafy vegetables: lettuce, spinach, celery, broccoli, cabbage, and cauliflower (*See* EFH, 2011 Chapter 9 (August 2018 update), Table C-1, pg C-7 for the full list).
[3] Examples of fruiting vegetables: tomato, peppers, eggplant, okra (*See* EFH, 2011 Chapter 9 (August 2018 update), Table C-1, pg C-6 for the full list).

point concentration (EPC) in plant tissue as part of the risk evaluation and development of PCLs. The methodology and the model used to relate chemical concentrations in leafy and fruiting vegetables to soil is presented in **Attachment 1** to this memo.

3.1. Exposure Model and Assumptions

Mathematical models used to calculate intakes for the consumption of homegrown produce are presented in **Tables 1 through 3**. Each table defines the variables used in estimating doses and includes the assumptions (i.e., exposure parameters) used in the model. Exposure parameters and standard values recommended in the MTCA Rule were preferentially applied as appropriate. EPA's Exposure Factor Handbook (EFH) was used to derive ingestion rates for homegrown leafy and fruiting vegetables (EPA, 2011). The intake models in **Tables 1 through 3** are described below.

- **Table 1**. This model shows the calculation of individual intakes associated with leafy and fruiting vegetables and incorporates the chemical-specific soil to plant uptake factor. This model can be used to calculate intakes separately for the child and adult receptor, and separately for leafy and fruiting vegetables.
- **Table 2**. This model shows the combined intake calculation for leafy and fruiting vegetables. This model uses the plant tissue concentration and does not incorporate the chemical-specific soil to plant uptake factor. It can be used to calculate intakes separately for the child and adult receptor.
- **Table 3**. This model shows the combined intake calculation for leafy and fruiting vegetables and can be used to calculate the combined cancer intake for the child/adult receptor. It uses the plant tissue concentration and does not incorporate the chemical-specific soil to plant uptake factor.

Two types of doses were calculated based on the mathematical models presented above. One type (non-cancer dose), which was averaged over the actual exposure duration, was used to evaluate the potential for noncarcinogenic health effects. The other type (cancer dose) which was averaged over a 75-year lifetime, was used to evaluate potential carcinogenic risk. The exposure doses were expressed as intakes in milligrams contaminant per kilogram body weight per day (mg/kg-day).

The same basic intake model identified in EPA's Risk Assessment for Superfund Guidance (RAGS) Part A (EPA, 1989) was used for the food consumption pathway with the following modifications.

- Ingestion rate is expressed as grams/day, not kg/meal.
- Exposure frequency is expressed as days/year, not meals/year.
- A unit conversion factor is added to convert the ingestion rate in grams/day to kilograms/day.

Based on MTCA, the exposure duration for the residential scenario was assumed to be 30 years. This includes 6 years as a child and 24 years as an adult. The 24-year exposure duration (i.e., 6 to 30 years) for the adult was selected to better align with age group categories identified in EPA's EFH for the consumption of homegrown produce (EPA, 2011).

3.1.1. Food Consumption Rate

The residential scenario evaluated herein assumes that the food produced for consumption are both produced and consumed at the exposure location (i.e., home). This assumption is best represented by consumer-only food ingestion rates[4]. Consumer-only food ingestion rates represent the amount of produce consumed by individuals during the survey period. In other words, the consumer-only rates represent the amount of food that families produced themselves and consumed during the week the survey was taken. For this evaluation, it is conservatively assumed that 100% of produce grown at a site is contaminated, yielding a contaminated fraction (FI) of 1.

The consumer-only ingestion rates used in the evaluation are based on raw biota, which does not include cooking and preparation loss (i.e., unprepared ingestion rate). In this evaluation, use of the unprepared ingestion rate better matches the plant concentration which does not account for cooking/preparation loss. EPA uses the unprepared ingestion rate as a default for calculating preliminary remediation goals (PRGs) for the food consumption pathway (ORNL, 2021).

Separate child and adult ingestion rates for home-grown leafy and fruiting vegetables were derived using data from Chapters 9 and 13 of the EFH (EPA, 2011). Age-specific categories used for the child are from 0 to 6 years, and 6 to 30 years for the adult. Chapter 13 provides ingestion rates for home-produced total and individual fruits and vegetables (e.g., lettuce and tomatoes), but does not break it down by leafy and fruiting vegetables. In addition, Chapter 13 does not provide data for all the age-specific categories that are being evaluated for the child and adult resident included in this evaluation. Therefore age-specific consumer-only ingestion rates for leafy and fruiting vegetables from Chapter 9, which are based on combined home produced and commercially produced sources, were used to derive a time-weighted average (TWA by duration) ingestion rate, which was adjusted (using data in Chapter 13) to represent the mean ingestion rate for home-produced only leafy and fruiting vegetables. Detailed ingestion rate calculations are provided in **Attachment 2** and an example is provided below for the future child resident that ingests leafy vegetables. All the data presented below represents consumer-only ingestion rates.

Step 1 – Derive the estimated total population ingestion rate of leafy vegetables for households that garden. This is done by first dividing the mean total population rate for leafy vegetables (Table 9-6, pg. 9-40) by the mean total population rate for total vegetables (Table 9-4, pg. 9-25) as presented in Chapter 9. This calculation indicates that close to 20 percent of the total vegetable ingestion rate may be attributed to leafy vegetables. This percentage is then multiplied by the mean ingestion rate for total vegetables for households that garden (Table 13-10, pg. 13-19) to derive the estimated portion that is from leafy vegetables. This calculation is shown below.

$$IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) = \left(\frac{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)}{TP_{tot\text{-}veg}\left(\frac{2.87\ g}{kg\text{-}day}\right)}\right) \times IR_{house\text{-}garden\text{-}tot\text{-}veg}\left(\frac{2.17\ g}{kg\text{-}day}\right)$$

Step 2 – Derive the TWA (by duration) ingestion rate of leafy vegetables for the future child resident using data from Chapter 9 (Table 9-6, pg. 9-40). This calculation is shown below.

[4] EPA also recommends the use of consumer-only ingestion rate data to evaluate the food consumption pathway (EPA, 2005; ORNL, 2021).

$$TWA_{leafy-veg} = \frac{\left(\begin{array}{l} \left(IR_{<1}\left(\frac{0.54\ g}{kg\text{-}day}\right)\right) \times ED_{<1}(1\ yr) + \\ \left(IR_{1<2}\left(\frac{0.77\ g}{kg\text{-}day}\right)\right) \times ED_{1<2}(1\ yr) + \\ \left(IR_{2<3}\left(\frac{0.84\ g}{kg\text{-}day}\right)\right) \times ED_{2<3}(1\ yr) + \\ \left(IR_{3<6}\left(\frac{0.65\ g}{kg\text{-}day}\right)\right) \times ED_{3<6}(3\ yr) + \end{array} \right)}{ED_{child}(6\ yr)} = 0.68\,\frac{g}{kg\text{-}day}$$

This results in a TWA ingestion rate of leafy vegetables for the future child of 0.68 g/kg-day.

Step 3 – Derive the estimated ingestion rate of leafy vegetables for the future child resident that represents <u>households that garden</u>. This is done by first dividing the TWA ingestion rate of leafy vegetables for the child (*see* Step 2) by the mean total population rate for leafy vegetables (Table 9-6, pg. 9-40). This calculation indicates that the TWA for the 0 to 6 year old child that ingests leafy vegetables is about 19 percent more than the total population average that ingests leafy vegetables. This percentage (about 119 percent in this case) is then multiplied by the estimated total population ingestion rate of leafy vegetables for <u>households that garden</u> (*see* Step 1) to derive the estimated portion that is from leafy vegetables for the child. This calculation is shown below.

$$IR_{leafy\text{-}veg} = IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) \times \left(\frac{TWA_{leafy\text{-}veg}\left(\frac{0.68\ g}{kg\text{-}day}\right)}{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)} \right) = 0.52\,\frac{g}{kg\text{-}day}$$

Step 4 – Convert the ingestion rate to grams/kilogram.

The ingestion of homegrown produce intake formula (*see* **Attachment 2**) expresses the produce ingestion rate in grams per day instead of grams per kg/day. The MTCA default child body weight of 16 kg was used to convert the ingestion rate to grams per day as shown in the formula below.

$$IR_{leafy\text{-}veg\text{-}child} = \left[IR_{leafy\text{-}veg}\left(\frac{0.52\ g}{kg\text{-}day}\right)\right] \times 16\ kg = 8.3\,\frac{g}{day}\ (wet\ weight)$$

Leafy and fruiting vegetable ingestion rates derived for households that garden for future child and adult residents are summarized in the table below.

Receptor	Leafy Vegetables (g/day)	Fruiting Vegetables (g/day)
Child (0 to 6 years)	8.3	18.4
Adult (6 to 24 years)	25	45

4. RISK CHARACTERIZATION

The risk characterization presents the evaluation of the nature and degree of potential carcinogenic and noncarcinogenic health risks posed to the hypothetical future resident from ingestion of homegrown produce grown in soil contaminated with DDD, DDE, and DDT. Human health risks for carcinogenic and noncarcinogenic effects are discussed independently because of the different toxicological endpoints, relevant exposure durations, and methods employed in characterizing risk. **Note:** The toxicity data used to characterize the risks are discussed in this section rather than in a separate "Toxicity Assessment" section.

LCB reported in their ERTS that their action level is 0.1ppm (or mg/kg) in cannabis plant tissue. This action level was applied as the exposure point concentration (EPC) in plant tissue as part of this risk evaluation. This resulted in the following predicted soil concentrations based on the chemical-specific soil to plant uptake factors identified for each pesticide (*see* **Attachment 1**).

Pesticide COC	Plant Tissue Action Level (mg/kg)	Uptake Factor[1]	Predicted Soil Concentration (mg/kg)[2]
DDD	0.1	6.42E-04	155.8
DDE	0.1	3.34E-04	299
DDT	0.1	1.96E-04	509

Notes:

[1] Chemical-specific uptake factor (a.k.a., biotransfer factors) used to predict the bioconcentration of pesticides (i.e., DDD, DDE, and DDT) in garden homegrown produce grown in contaminated soil. The uptake factor applies to above-ground vegetables and is the same for leafy and fruiting vegetables.

[2] The predicted soil concentration is calculated as: Plant Tissue Action Level ÷ Uptake Factor

4.1. Cancer Risk

Cancer risk for oral ingestion is calculated by multiplying the estimated daily dose that is averaged over a lifetime (lifetime-averaged doses) by a compound-specific oral cancer potency factor (CPFo). Each of the pesticide COCs has a CPFo in EPA's Integrated Risk Information System (IRIS) database as shown below. These are also identified in Ecology's Cleanup Level And Risk Calculations (CLARC) database.

Pesticide COC	Oral CPF kg-day/mg	Source
DDD	0.24	IRIS, 2023
DDE	0.34	IRIS, 2023
DDT	0.34	IRIS, 2023

The combined potential upper bound cancer risk is estimated by summing the risk estimates across all COCs and relevant exposure routes. It's also noted that the cancer risks are summed for the future child and adult resident that consumes homegrown produce. This approach is in accordance with MTCA and is consistent with EPA guidelines in which risks associated with carcinogens are considered additive with the same toxicological endpoint (i.e., cancer).

Cancer risk is expressed in terms of lifetime excess cancer risk. This concept assumes that the risk of cancer from a given chemical is in "excess" of the background risk of developing cancer. For example, a risk of 1×10^{-6} (same as 1E-06) equates to approximately one excess cancer case in a population of

1,000,000 individuals due to exposure to the cancer-causing substance over a lifetime. Under MTCA Method B, the human health excess cancer risk level for individual carcinogens may not exceed a risk of 1E-06. Also, the cumulative risk from multiple chemicals and pathways may not exceed 1 x 10^{-5} (same as 1E-05) or one excess cancer case in a population of 100,000 individuals.

Application of 0.1 mg/kg as the EPC in plant tissue results in cancer risks that exceed the MTCA Method B threshold of 1E-06 for all COCs for both the child and adult receptors. In addition, the cumulative risk from all the COCs generated a cancer risk in excess of the MTCA Method B threshold of 1E-05. Ingestion of fruiting vegetables contributed the most to the overall risk (over 65 percent) due to a higher ingestion rate. A summary of the risks are presented below for the combined child/adult future resident.

Pesticide COC	Child/Adult Cancer Risk
DDD	1.09E-05
DDE	1.54E-05
DDT	1.54E-05
Total	4.2E-05

4.2. Noncancer Hazards

Noncarcinogenic health effects are evaluated by comparing the estimated daily intake of the COC, which is averaged over the period of exposure, to its reference dose (RfD). This is accomplished by the calculation of hazard quotients (HQs) and a hazard index (HI). The HQ for a particular COC is the ratio of the estimated daily intake through a given exposure route and the applicable RfD. Estimated daily intakes for individual chemicals and routes of exposure are compared to RfDs. The RfD represents the daily intake of a chemical to which a receptor can be exposed over a given length of time without any reasonable expectation of adverse noncarcinogenic health effects. The HQ is derived by dividing the daily intake by the RfD. The HQs, determined for each COC by exposure pathway and age group, are summed within an exposure scenario to obtain a HI. The HI is an expression of the additivity of noncarcinogenic health effects. The principle of additivity assumes that similar organ systems and health endpoints will be affected by the COCs. As such, and consistent with EPA superfund risk assessment guidance, MTCA allows noncancer HQs from multiple chemicals to be apportioned by similar type of toxic response when evaluating compliance with the noncancer target HI of 1.

Each of the pesticide COCs has a chronic oral RfD. The chronic RfDs are the same for each COC as summarized below. Also provided is the noncancer target organ associated with the RfD. These are also identified in Ecology's CLARC database.

Pesticide COC	Oral RfD mg/kg-day	Source	Noncancer Target Organ
DDD	0.0005	ATSDR, 2022	Liver
DDE	0.0005	ATSDR, 2022	Liver
DDT	0.0005	IRIS, 2023	Liver

The HIs generated for the future child and adult resident do not exceed the MTCA threshold of 1. The HI for the future child and adult resident are 1 and 0.6, respectively. A summary of the noncancer hazards are presented below for the future child and adult resident.

Pesticide COC	Ingestion of Leafy Vegetables	Ingestion of Fruiting Vegetables	HI
Future Child Resident			
DDD	1.04E-01	2.34E-01	3.34E-01
DDE	1.04E-01	2.34E-01	3.34E-01
DDT	1.04E-01	2.34E-01	3.34E-01
		Total HI	**1.0**
Future Adult Resident			
DDD	7.14E-02	1.29E-01	2.00E-01
DDE	7.14E-02	1.29E-01	2.00E-01
DDT	7.14E-02	1.29E-01	2.00E-01
		Total HI	**0.6**

5. CALCULATION OF PRELIMINARY CLEANUP LEVELS

The exposure assumptions, uptake factors, and intake models developed in this risk evaluation—to estimate exposure through the consumption of homegrown produce exposure route—were used to develop the preliminary cleanup levels (PCLs). PCLs for consumption of homegrown produce were calculated using a simplified method based on the exposure assumptions applied in the intake equation. The ratio between the target risk or HI and the calculated risk or HI due to a specific chemical in a specific medium is used. This ratio provides the multiplier for the EPC, and this product is the PCL. The general equation used to calculate PCLs for homegrown produce consumption is provided below.

Cancer-based PCL: $Plant\ PCL_{leafy\ or\ fruiting} = \frac{TR\ x\ EPC}{CR}$

Non-cancer-based PCL: $Plant\ PCL_{leafy\ or\ fruiting} = \frac{THI\ x\ EPC}{HI}$

Where:

Plant PCL = Risk-based PCL in plants (mg/kg)

TR or THI = Target Risk Level (cancer risk = 1E-06) or Target HI (HI = 1).

EPC = Exposure point concentration in plant tissue.

CR or HI = Cancer risk or HI calculated based on the EPC.

Soil PCLs were derived by dividing the plant tissue PCL by the chemical-specific soil to plant uptake factor provided in **Attachment 1**: Plant Tissue PCL ÷ Uptake Factor.

Cancer PCLs – Future Combined Child/Adult Resident (Consumption of Homegrown Produce)

PCLs for cancer effects are based on achieving a 1E-06 risk for each COC. Adjustments for cumulative cancer risk are not needed because the total risk from three COCs at a 1E-06 risk is less than 1E-05.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.0092	14	0.027	42
DDE	0.0065	19	0.019	57
DDT	0.0065	33	0.019	97

Notes:

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] These plant tissue PCLs apply if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

Noncancer PCLs – Future Child Resident (Consumption of Homegrown Produce)

PCLs for noncancer effects are based on a total HI of 1 for the summation of HQs for DDD, DDE, and DDT (these all effect the same target organ – liver). The noncancer PCLs presented below are based on exposure to the future child resident which generated the highest HI.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.1	160	0.32	500
DDE	0.1	300	0.32	960
DDT	0.1	510	0.32	1600

Notes:

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] The plant tissue PCL of 0.32 mg/kg applies if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

MTCA Cleanup Levels – Human Direct Contact

For residential exposure scenarios that include gardening, it is common to evaluate concurrent exposure via human direct contact (e.g., incidental ingestion) and consumption of homegrown produce. However, the discussion of these exposure routes has been kept separate in this evaluation based on the LCB ERTS request that focuses on concentrations in plant tissue.

Ecology's CLARC database provides pre-calculated Method B soil direct contact levels based on residential exposure. Noncancer and cancer Method B direct contact levels based on residential direct contact (i.e., incidental soil ingestion) with soil for DDD, DDE, and DDT are summarized below along with the Method A unrestricted level for DDT. The noncancer levels are based on a HI of 1 and have not been adjusted downward so that the summation of hazards from DDD, DDE, and DDT does not exceed 1. The cancer levels are based on a risk of 1E-06.

Pesticide COC	Method B Noncancer Direct Contact[1] (mg/kg)	Method B Cancer Direct Contact (mg/kg)	Method A Unrestricted[2] (mg/kg)
DDD	40	4.2	---
DDE	40	2.9	---
DDT	40	2.9	3

Notes:

[1] The Method B noncancer direct contact level adjusted to account additive noncancer effects from DDD, DDE, and DDT is 13 mg/kg. At this level, the sum of the HQs equals an HI of 1.

[2] The Method A level is based on human direct contact at a risk of 1E-06 using the Method B cancer equation.

6. UNCERTAINIES

The risk assessment process requires numerous assumptions, all of which contribute to uncertainty in the risk evaluation. A few of the key uncertainties as it relates to the food consumption pathway evaluated herein are discussed below.

- **Exposure to Cannabis** – This risk evaluation was conducted in response to concerns raised by the LCB over pesticide levels reported in cannabis foliage. The exposure pathway related to human consumption of homegrown vegetables contaminated with pesticides is expected to be much different than ingestion pathways associated with cannabis. As such, this scenario is not intended to be a direct proxy for characterizing exposure and risk to pesticides in cannabis via ingestion but may provide a conservative approach to evaluating exposure to these pesticides in soil and plant tissue via human consumption. However, the degree to which risk as it relates to cannabis use may have been under- or overestimated is unknown.

- **Plant Exposure Point Concentration (EPC)** – LCB reported that their action level is 0.1 ppm (or mg/kg) in cannabis plant tissue. This action level was applied as the EPC in plant tissue as part of the risk evaluation and development of PCLs. According to the LCB, actual detected concentrations of DDT in plant tissue are reportedly higher than the action level used in the risk evaluation. Use of the 0.1 ppm action level as the EPC in plant tissue likely resulted in an underestimation of risk.

- **Soil to Plant Uptake Factor** – A source of uncertainty relates to the predictive mathematical model used to calculate uptake of chemicals by above-ground leafy and fruiting vegetables from contaminated soil. The usefulness of the empirical model to determine the plant uptake factors is related to the extent to which the test conditions of the studies used to derive the uptake factors match site-specific conditions. Some of the main factors that affect the uptake and distribution of chemical compounds within plants include the following (Paterson, 1994):

    - Physical-chemical factors including water solubility, vapor pressure, molecular weight, and octanol/water partition coefficient.

    - Soil characteristics including temperature, organic and mineral matter content, and water content. These can be highly variable from one location to another and vary seasonally at a single location (McKone et. al., 2007).

    - Plant characteristics such as the type of root system, shape and composition of the leaves, and lipid (oil) content. These can vary significantly from one plant species to another, and seasonally in the same plant (McKone et. al., 2007).

  In this assessment, plant uptake for organics was based on the relationship between chemical-specific bioconcentration factors for vegetation and the log of the octanol-water partition (log K_{ow}) coefficient (Travis and Arms, 1988). Use of this empirical regression model may have resulted in the under- or overestimation of risk.

- **Food Consumption Rate** – Consumer-only ingestion rates were used to derive ingestion rates for homegrown leafy and fruiting vegetables. These rates represent only those individuals who reported eating the food item during the survey period. These rates may overestimate exposures over longer time periods because they do not account for the days on which individuals did not eat home-produced foods.

- **Human Receptors** – The future residential scenario evaluated for the food consumption pathway is based on exposure to both child and adults. Since it’s not expected that a child as defined under the residential scenario would be exposed to cannabis, exposure intakes developed under the child scenario likely results in an overestimation of risk. Risks and PCLs assuming adult only exposure (under the residential scenario) via consumption of pesticide contaminated homegrown produce are presented in the tables below.

Cancer PCLs – Future Adult Resident (Consumption of Homegrown Produce)

PCLs for cancer effects are based on achieving a 1E-06 risk for each COC. Adjustments for cumulative cancer risk are not needed because the total risk from three COCs at a 1E-06 risk is less than 1E-05.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.013	20	0.036	57
DDE	0.0092	27	0.026	77
DDT	0.0092	47	0.026	130

Notes:

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] These plant tissue PCLs apply if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

Noncancer PCLs – Future Adult Resident (Consumption of Homegrown Produce)

PCLs for noncancer effects are based on a total HI of 1 for the summation of HQs for DDD, DDE, and DDT (these all effect the same target organ – liver). The noncancer PCLs presented below are based on exposure to the future adult resident.

COC	Scenario 1		Scenario 2	
	Plant PCL for Ingestion of both Leafy and Fruiting Vegetables[1] (mg/kg)	Soil PCL[3] (mg/kg)	Plant PCL for Ingestion of only Leafy Vegetables[2] (mg/kg)	Soil PCL[3] (mg/kg)
DDD	0.17	260	0.47	730
DDE	0.17	500	0.47	1,400
DDT	0.17	850	0.47	2,400

Notes:

[1] The PCL is based on exposure to both leafy and fruiting vegetables at the plant PCL concentration.

[2] The plant tissue PCL of 0.47 mg/kg applies if the scenario only includes the consumption of leafy vegetables. This scenario is included because cannabis may be more representative of a leafy vegetable.

[3] The soil PCL is calculated from the plant tissue PCL using the soil to plant uptake factors provided in **Attachment 1**. Soil PCLs are calculated as: Plant PCL ÷ Soil to Plant Uptake Factor.

7. REFERENCES

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Table 1

Intake Model For Calculating Exposure Doses From The Consumption Of Homegrown Produce (For Individual Produce Types)

$$Intake\ Consumption\ of\ Homegrown\ Produce\ \left(\frac{mg}{kg\text{-}day}\right) = \frac{(\mathrm{Cs} \times \mathrm{UF}_{plant} \times \mathrm{IR}_{plant} \times \mathrm{UCF} \times \mathrm{FI} \times \mathrm{EF} \times \mathrm{ED})}{\mathrm{BW} \times \mathrm{AT}}$$

Where:

Cs	= Chemical concentration in soil (mg/kg)
UF_{plant}	= Chemical-specific soil to plant uptake factor (unitless)
IR_{plant}	= Plant ingestion rate (g/day – wet weight)
UCF	= Unit conversion factor (0.001 kg/g)
FI	= Fraction of homegrown produce ingested from the contaminated source (unitless)
EF	= Exposure frequency (days/year)
ED	= Exposure duration (years)
BW	= Body weight (kg)
AT	= Averaging time (days)

Exposure Assumptions: Two general categories of above-ground garden produce were addressed: leafy vegetables (e.g., lettuce) and fruiting vegetables (e.g., tomatoes). Intakes are calculated separately for child and adult receptors for each category of garden produce. ***Note:*** Cs x UF_{plant} = Modelled concentration in plant tissue (mg/kg wet weight).

Cs	=	Exposure point concentration in soil (mg/kg).
UF_{plant}	=	Chemical-specific uptake factor used to estimate tissue concentrations in leafy and fruiting vegetables. The uptake factor is defined as the ratio of the chemical concentration in the plant to the chemical concentration in the soil under equilibrium conditions. Uptake factors were adjusted for the water content to represent wet weight. A water content of 95% was used in deriving the uptake factors (Baes et al., 1984).
IR_{plant}	=	Adult and child consumption rates (wet weight) for leafy and fruiting vegetables. Consumption rates were estimated based on data from EPA's Exposure Factor Handbook (EPA, 2011 and updates; Chapters 9 and 13). Leafy vegetables: Child – 8.3 g/day; Adult 25 g/day Fruiting vegetables: Child – 18.4 g/day; Adult 45 g/day
FI	=	100 percent (or 1) for the child and adult resident.
EF	=	365 days/year for child and adult residents (MTCA Method B default).
ED	=	6 years for the child resident (MTCA Method B default).
	=	24 years for the adult resident. The total ED for combined child and adult exposure is 30 years.
BW	=	16 kg for the child resident (MTCA Method B default).
	=	70 kg for the adult resident (MTCA Method B default).
AT	=	(Noncancer) – 6 years x 365 days/year for the child resident.
	=	(Noncancer) – 24 years x 365 days/year for the adult resident.
	=	(Cancer) – 75 years x 365 days/year for child and adult residents.

References

EPA, 2011. *Exposure Factors Handbook: 2011 Edition*. EPA/600/R-090/052F. September 2011. Chapter 9 was updated on August 15, 2018.

Baes, C., R.D. Sharp, A.L. Sjoreen, and R.W. Shor. 1984. *A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides Through Agriculture*. Prepared by Oak Ridge National Laboratory for the U.S. Department of Energy. ORNL-5786

Table 2

Intake Model For Calculating Exposure Doses From The Consumption Of Homegrown Produce (For Combined Produce Types)

$$Intake\ Consumption\ of\ Homegrown\ Produce\ \left(\frac{mg}{kg\text{-}day}\right) = \frac{\left(C_{leafy} \times \mathrm{IR}_{leafy} + C_{fruiting} \times \mathrm{IR}_{fruiting}\right) \times (UCF \times FI \times EF \times ED)}{\mathrm{BW} \times \mathrm{AT}}$$

Where:

C_{leafy}	= Exposure point concentration in leafy vegetables (mg/kg – wet weight)
IR_{leafy}	= Leafy vegetable ingestion rate (g/day – wet weight)
$C_{fruiting}$	= Exposure point concentration in fruiting vegetables (mg/kg – wet weight)
$IR_{fruiting}$	= Fruiting vegetable ingestion rate (g/day – wet weight)
UCF	= Unit conversion factor (0.001 kg/g)
FI	= Fraction of homegrown produce ingested from the contaminated source (unitless)
EF	= Exposure frequency (days/year)
ED	= Exposure duration (years)
BW	= Body weight (kg)
AT	= Averaging time (days)

Exposure Assumptions: Two general categories of above-ground garden produce were addressed: leafy vegetables (e.g., lettuce) and fruiting vegetables (e.g., tomatoes). Intakes are calculated separately for child and adult receptors for each category of garden produce.

$C_{leafy\ or\ fruiting}$ = Modelled exposure point concentration in plant tissue (leafy or fruiting vegetables) (mg/kg).

$IR_{leafy\ or\ fruiting}$ = Adult and child consumption rates (wet weight) for leafy and fruiting vegetables. Consumption rates were estimated based on data from EPA's Exposure Factor Handbook (EPA, 2011 and updates; Chapters 9 and 13).

Leafy vegetables: Child – 8.3 g/day; Adult 25 g/day

Fruiting vegetables: Child – 18.4 g/day; Adult 45 g/day

FI	=	100 percent (or 1) for the child and adult resident.
EF	=	365 days/year for child and adult residents (MTCA Method B default).
ED	=	6 years for the child resident (MTCA Method B default).
	=	24 years for the adult resident. The total ED for combined child and adult exposure is 30 years.
BW	=	16 kg for the child resident (MTCA Method B default).
	=	70 kg for the adult resident (MTCA Method B default).
AT	=	(Noncancer) – 6 years x 365 days/year for the child resident.
	=	(Noncancer) – 24 years x 365 days/year for the adult resident.
	=	(Cancer) – 75 years x 365 days/year for child and adult residents.

References

EPA, 2011. *Exposure Factors Handbook: 2011 Edition*. EPA/600/R-090/052F. September 2011. Chapter 9 was updated on August 15, 2018.

Table 3

Intake Model For Calculating Exposure Doses From The Consumption Of Homegrown Produce (For Combined Produce Types and Child/Adult Receptor)

$$Intake\ Consumption\ of\ Homegrown\ Produce\ \left(\frac{mg}{kg\text{-}day}\right) = \frac{\left(C_{leafy} \times \mathrm{IR}_{L\text{-}adj} + C_{fruiting} \times \mathrm{IR}_{F\text{-}adj}\right) \times (UCF \times FI \times EF)}{\mathrm{AT}}$$

Where:

C_{leafy} = Exposure point concentration in leafy vegetables (mg/kg – wet weight)
$IR_{L\text{-}adj}$ = Age-adjusted leafy vegetable ingestion factor (g-y/kg-day).
$C_{fruiting}$ = Exposure point concentration in fruiting vegetables (mg/kg – wet weight)
$IR_{F\text{-}adj}$ = Age-adjusted fruiting vegetable ingestion factor (g-y/kg-day)
UCF = Unit conversion factor (0.001 kg/g)
FI = Fraction of homegrown produce ingested from the contaminated source (unitless)
EF = Exposure frequency (days/year)
AT = Averaging time (days)

Exposure Assumptions: Two general categories of above-ground garden produce were addressed: leafy vegetables (e.g., lettuce) and fruiting vegetables (e.g., tomatoes). Intakes are calculated separately for child and adult receptors for each category of garden produce.

$C_{leafy\ or\ fruiting}$ = Modelled exposure point concentration in plant tissue (leafy or fruiting vegetables) (mg/kg).

$IR_{L\text{-}adj\ or\ F\text{-}adj}$ = Age-adjusted child/adult ingestion factor for leafy and fruiting vegetables. Consumption rates were estimated based on data from EPA's Exposure Factor Handbook (EPA, 2011 and updates; Chapters 9 and 13). Age-adjusted factors were calculated in accordance with EPA RAGS Part B (EPA, 1991).

$IR_{L\text{-}adj}$: ([$IR_{child\text{-}leafy}$ x ED_{child}]/BW_{child}) + ([$IR_{adult\text{-}leafy}$ x ED_{adult}]/BW_{adult}) = 11.68 g-y/kg-day

$IR_{F\text{-}adj}$: ([$IR_{child\text{-}fruiting}$ x ED_{child}]/BW_{child}) + ([$IR_{adult\text{-}fruiting}$ x ED_{adult}]/BW_{adult}) = 22.33 g-y/kg-day

FI = 100 percent (or 1) for the child and adult resident.

EF = 365 days/year for child and adult residents (MTCA Method B default).

ED = 6 years for the child resident (MTCA Method B default).
= 24 years for the adult resident. The total ED for combined child and adult exposure is 30 years.

BW = 16 kg for the child resident (MTCA Method B default).
= 70 kg for the adult resident (MTCA Method B default).

AT = (Cancer) – 75 years x 365 days/year for child and adult residents.

References

EPA, 1991. *Risk Assessment Guidance for Superfund, Part B, Development of Risk-based Preliminary Remediation Goals*. OSWER Directive 9285.7-01B. 13 December 1991.

ATTACHMENT 1

METHODOLOGY FOR CALCULATING CHEMICAL CONCENTRATIONS IN LEAFY AND FRUITING VEGETABLES

1. INTRODUCTION

This attachment describes the methodology that was used to determine chemical-specific uptake factors (a.k.a., biotransfer factors) that predict the bioconcentration of pesticides (i.e., DDD, DDE, and DDT) in garden homegrown produce grown in contaminated soil. Two general categories of edible plants grown in home gardens were considered: leafy vegetables and fruiting vegetables.

2. DEVELOPMENT OF UPTAKE FACTORS FOR LEAFY AND FRUITING VEGETABLES

Edible portions of leafy and fruiting vegetables fall under the category of above-ground plant parts. The uptake factors for above-ground plant parts were derived based on the following regression equation for organic compounds (Travis and Arms, 1988):

$$\log B_v = 1.588 - 0.578 \log K_{ow}$$

Where:

B_v = Bioconcentration factor for vegetation, the ratio of the chemical concentration in above-ground plant parts (mg of chemical/kg of dry plant) to the chemical concentration in soil (mg of chemical/kg of dry soil).

log K_{ow} = Log of the octanol-water partition coefficient. Log K_{ow} values were obtained from the Oak Ridge National Lab Risk Assessment Information System chemical database (ORNL RAIS, 2023).

Because B_v is expressed in terms of kg of dry plant, and because vegetable ingestion rates are expressed as wet weight of plant, B_v was adjusted for the water content of the plant. Leafy vegetables and garden fruits have been reported to have a water content of 95-96 percent (Baes et al., 1984). A water content of 95% was used in deriving the uptake factors. The uptake factors for leafy vegetables and garden fruits were calculated by multiplying B_v by the percent dry weight (i.e., 5% or 0.05).

The Travis and Arms regression equation above is based on data for 29 chemicals whose log K_{ow} falls in the range of 1.15 to 9.35 and the use of the equation may be inappropriate for chemicals whose log K_{ow} is outside of this range. The log K_{ow}'s for DDD, DDE, and DDT fall within this range. The uptake factors derived using the regression equation above are presented in the table below.

Pesticide COC	Log K_{ow}[1]	B_v[2]	Uptake Factor[3]
DDD	6.02	1.28E-02	6.42E-04
DDE	6.51	6.69E-03	3.34E-04
DDT	6.91	3.93E-03	1.96E-04

3. REFERENCES

Baes, C., R.D. Sharp, A.L. Sjoreen, and R.W. Shor. 1984. *A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides Through Agriculture*. Prepared by Oak Ridge National Laboratory for the U.S. Department of Energy. ORNL-5786.

ORNL RAIS, 2023. Oak Ridge National Lab Risk Assessment Information System chemical database.

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ATTACHMENT 2

HOMEGROWN VEGETABLE INGESTION RATE CALCULATIONS

(LEAFY AND FRUITING)

Child Resident (0 to 6 years) – Leafy Vegetable Ingestion Rate

Ingestion rate results presented in the equations below are based on the full calculated unrounded values.

<u>*Child Resident (0 to 6 years) intake rate derivation*</u>

$$IR_{leafy\text{-}veg} = IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) \times \left(\frac{TWA_{leafy\text{-}veg}\left(\frac{0.68\ g}{kg\text{-}day}\right)}{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)}\right) = 0.52\,\frac{g}{kg\text{-}day}$$

Where:

$$IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) = \left(\frac{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)}{TP_{tot\text{-}veg}\left(\frac{2.87\ g}{kg\text{-}day}\right)}\right) \times IR_{house\text{-}garden\text{-}tot\text{-}veg}\left(\frac{2.17\ g}{kg\text{-}day}\right)$$

- $IR_{leafy\text{-}veg}$ = Derived ingestion rate of leafy vegetables for the child resident (0 to 6 years).
- $IR_{house\text{-}garden\text{-}leafy}$ = Estimated total population ingestion rate of leafy vegetables <u>for households that garden</u>.
- $IR_{house\text{-}garden\text{-}tot\text{-}veg}$ = Mean ingestion rate for total vegetables <u>for households that garden</u> (Table 13-10).
- $TP_{leafy\text{-}veg}$ = Mean total population ingestion rate for leafy vegetables (Table 9-6).
- $TP_{tot\text{-}veg}$ = Mean total population ingestion rate for total vegetables (Table 9-4).

$$TWA_{leafy-veg} = \frac{\left(\begin{array}{l}\left(IR_{<1}\left(\frac{0.54\ g}{kg\text{-}day}\right)\right) \times ED_{<1}(1\ yr) + \\ \left(IR_{1<2}\left(\frac{0.77\ g}{kg\text{-}day}\right)\right) \times ED_{1<2}(1\ yr) + \\ \left(IR_{2<3}\left(\frac{0.84\ g}{kg\text{-}day}\right)\right) \times ED_{2<3}(1\ yr) + \\ \left(IR_{3<6}\left(\frac{0.65\ g}{kg\text{-}day}\right)\right) \times ED_{3<6}(3\ yr) +\end{array}\right)}{ED_{child}(6\ yr)} = 0.68\,\frac{g}{kg\text{-}day}$$

- $TWA_{leafy\text{-}veg}$ = Time weighted average (by duration) ingestion rate of leafy vegetables for the child resident (0 to 6 years).
- Leafy vegetable ingestion rates by age group (Table 9-6).

<u>*Child resident (0 to 6 years) intake rate expressed in grams/day (adjustment for body weight)*</u>

The ingestion of homegrown produce intake formula expresses the produce ingestion rate in grams per day instead of grams per kg/day. The MTCA default child body weight of 16 kg was used to covert the ingestion rate to grams per day.

$$IR_{leafy\text{-}veg\text{-}child} = \left[IR_{leafy\text{-}veg}\left(\frac{0.52\ g}{kg\text{-}day}\right)\right] \times 16\ kg = 8.3\,\frac{g}{day}\ (wet\ weight)$$

Adult Resident (6 to 26 years) – Leafy Vegetable Ingestion Rate

Adult Resident (6 to 26 years) intake rate derivation

$$IR_{leafy\text{-}veg} = IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) \times \left(\frac{TWA_{leafy\text{-}veg}\left(\frac{0.47\ g}{kg\text{-}day}\right)}{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)}\right) = 0.36\frac{g}{kg\text{-}day}$$

Where:

$$IR_{house\text{-}garden\text{-}leafy}\left(\frac{0.43\ g}{kg\text{-}day}\right) = \left(\frac{TP_{leafy\text{-}veg}\left(\frac{0.57\ g}{kg\text{-}day}\right)}{TP_{tot\text{-}veg}\left(\frac{2.87\ g}{kg\text{-}day}\right)}\right) \times IR_{house\text{-}garden\text{-}tot\text{-}veg}\left(\frac{2.17\ g}{kg\text{-}day}\right)$$

- $IR_{leafy\text{-}veg}$ = Derived ingestion rate of leafy vegetables for the adult resident (6 to 30 years).
- $IR_{house\text{-}garden\text{-}leafy}$ = Estimated total population ingestion rate of leafy vegetables <u>for households that garden</u>.
- $IR_{house\text{-}garden\text{-}tot\text{-}veg}$ = Mean ingestion rate for total vegetables <u>for households that garden</u> (Table 13-10).
- $TP_{leafy\text{-}veg}$ = Mean total population ingestion rate for leafy vegetables (Table 9-6).
- $TP_{tot\text{-}veg}$ = Mean total population ingestion rate for total vegetables (Table 9-4).

$$TWA_{leafy-veg} = \frac{\left(\begin{array}{l}\left(IR_{6<11}\left(\frac{0.54\ g}{kg\text{-}day}\right)\right) \times ED_{6<11}(5\ yr) + \\ \left(IR_{11<16}\left(\frac{0.40\ g}{kg\text{-}day}\right)\right) \times ED_{11<16}(5\ yr) + \\ \left(IR_{16<21}\left(\frac{0.43\ g}{kg\text{-}day}\right)\right) \times ED_{16<21}(5\ yr) + \\ \left(IR_{21<30}\left(\frac{0.50\ g}{kg\text{-}day}\right)\right) \times ED_{21<30}(9\ yr) +\end{array}\right)}{ED_{adult}(24\ yr)} = 0.47\frac{g}{kg\text{-}day}$$

- $TWA_{leafy\text{-}veg}$ = Time weighted average (by duration) ingestion rate of leafy vegetables for the adult resident (6 to 30 years).
- Leafy vegetable ingestion rates by age group (Table 9-6).

Adult resident (6 to 30 years) intake rate expressed in grams/day (adjustment for body weight)

The ingestion of homegrown produce intake formula expresses the produce ingestion rate in grams per day instead of grams per kg/day. The MTCA default adult body weight of 70 kg was used to covert the ingestion rate to grams per day.

$$IR_{leafy\text{-}veg\text{-}adult} = \left[IR_{leafy\text{-}veg}\left(\frac{0.36\ g}{kg\text{-}day}\right)\right] \times 70\ kg = 25\frac{g}{day}\ (wet\ weight)$$

Child Resident (0 to 6 years) – Fruiting Vegetable Ingestion Rate

Child Resident (0 to 6 years) intake rate derivation

$$IR_{fruiting\text{-}veg} = IR_{house\text{-}fruiting\text{-}veg}\left(\frac{0.63\ g}{kg\text{-}day}\right) \times \left(\frac{TWA_{fruiting\text{-}veg}\left(\frac{1.52\ g}{kg\text{-}day}\right)}{TP_{fruiting\text{-}veg}\left(\frac{0.83\ g}{kg\text{-}day}\right)}\right) = 1.15\frac{g}{kg\text{-}day}$$

Where:

$$IR_{house\text{-}fruiting\text{-}veg}\left(\frac{0.63\ g}{kg\text{-}day}\right) = \left(\frac{TP_{fruiting\text{-}veg}\left(\frac{0.83\ g}{kg\text{-}day}\right)}{TP_{tot\text{-}veg}\left(\frac{2.87\ g}{kg\text{-}day}\right)}\right) \times IR_{house\text{-}garden\text{-}tot\text{-}veg}\left(\frac{2.17\ g}{kg\text{-}day}\right)$$

- $IR_{fruiting\text{-}veg}$ = Derived ingestion rate of fruiting vegetables for the child resident (0 to 6 years).
- $IR_{house\text{-}fruiting\text{-}veg}$ = Estimated total population ingestion rate of fruiting vegetables for households that garden.
- $IR_{house\text{-}garden\text{-}tot\text{-}veg}$ = Mean ingestion rate for total vegetables for households that garden (Table 13-10).
- $TP_{fruiting\text{-}veg}$ = Mean total population ingestion rate for fruiting vegetables (Table 9-6).
- $TP_{tot\text{-}veg}$ = Mean total population ingestion rate for total vegetables (Table 9-4).

$$TWA_{fruiting\text{-}veg} = \frac{\left(\begin{array}{l}\left(IR_{<1}\left(\frac{1.19\ g}{kg\text{-}day}\right)\right) \times ED_{<1}(1\ yr) + \\ \left(IR_{1<2}\left(\frac{1.5\ g}{kg\text{-}day}\right)\right) \times ED_{1<2}(1\ yr) + \\ \left(IR_{2<3}\left(\frac{1.62\ g}{kg\text{-}day}\right)\right) \times ED_{2<3}(1\ yr) + \\ \left(IR_{3<6}\left(\frac{1.6\ g}{kg\text{-}day}\right)\right) \times ED_{3<6}(3\ yr) +\end{array}\right)}{ED_{child}(6\ yr)} = 1.52\frac{g}{kg\text{-}day}$$

- $TWA_{fruiting\text{-}veg}$ = Time weighted average (by duration) ingestion rate of garden fruiting vegetables for the child resident (0 to 6 years).
- Garden fruiting vegetable ingestion rates by age group (Table 9-6).

Child resident (0 to 6 years) intake rate expressed in grams/day (adjustment for body weight)

The ingestion of homegrown produce intake formula expresses the produce ingestion rate in grams per day instead of grams per kg/day. The MTCA default child body weight of 16 kg was used to covert the ingestion rate to grams per day.

$$IR_{fruiting\text{-}veg\text{-}child} = \left[IR_{fruiting\text{-}veg}\left(\frac{1.15\ g}{kg\text{-}day}\right)\right] \times 16\ kg = 18.4\frac{g}{day}\ (wet\ weight)$$

Adult Resident (6 to 30 years) – Fruiting Vegetable Ingestion Rate

Adult Resident (6 to 30 years) intake rate derivation

$$IR_{fruiting\text{-}veg} = IR_{house\text{-}fruiting\text{-}veg}\left(\frac{0.63\ g}{kg\text{-}day}\right) \times \left(\frac{TWA_{fruiting\text{-}veg}\left(\frac{0.85\ g}{kg\text{-}day}\right)}{TP_{fruiting\text{-}veg}\left(\frac{0.83\ g}{kg\text{-}day}\right)}\right) = 0.64\frac{g}{kg\text{-}day}$$

Where:

$$IR_{house\text{-}fruiting\text{-}\mathrm{veg}}\left(\frac{0.63\ g}{kg\text{-}day}\right) = \left(\frac{TP_{fruiting\text{-}veg}\left(\frac{0.83\ g}{kg\text{-}day}\right)}{TP_{tot\text{-}veg}\left(\frac{2.87\ g}{kg\text{-}day}\right)}\right) \times IR_{house\text{-}garden\text{-}tot\text{-}veg}\left(\frac{2.17\ g}{kg\text{-}day}\right)$$

- $IR_{fruiting\text{-}veg}$ = Derived ingestion rate of fruiting vegetables for the adult resident (6 to 30 years).
- $IR_{house\text{-}fruiting\text{-}veg}$ = Estimated total population ingestion rate of fruiting vegetables for households that garden.
- $IR_{house\text{-}garden\text{-}tot\text{-}veg}$ = Mean ingestion rate for total vegetables for households that garden (Table 13-10).
- $TP_{fruiting\text{-}veg}$ = Mean total population ingestion rate for fruiting vegetables (Table 9-6).
- $TP_{tot\text{-}veg}$ = Mean total population ingestion rate for total vegetables (Table 9-4).

$$TWA_{fruit} = \frac{\left(\begin{array}{l}\left(IR_{6<11}\left(\frac{1.12\ g}{kg\text{-}day}\right)\right) \times ED_{6<11}(5\ yr) + \\ \left(IR_{11<16}\left(\frac{0.78\ g}{kg\text{-}day}\right)\right) \times ED_{11<16}(5\ yr) + \\ \left(IR_{16<21}\left(\frac{0.76\ g}{kg\text{-}day}\right)\right) \times ED_{16<21}(5\ yr) + \\ \left(IR_{21<30}\left(\frac{0.79\ g}{kg\text{-}day}\right)\right) \times ED_{21<30}(9\ yr) +\end{array}\right)}{ED_{adult}(24\ yr)} = 0.85\frac{g}{kg\text{-}day}$$

- $TWA_{fruiting\text{-}veg}$ = Time weighted average (by duration) ingestion rate of garden fruiting vegetables for the adult resident (6 to 30 years).
- Garden fruit ingestion rates by age group (Table 9-6).

Adult resident (6 to 30 years) intake rate expressed in grams/day (adjustment for body weight)

The ingestion of homegrown produce intake formula expresses the produce ingestion rate in grams per day instead of grams per kg/day. The MTCA default adult body weight of 70 kg was used to covert the ingestion rate to grams per day.

$$IR_{fruiting\text{-}veg\text{-}\mathrm{adult}} = \left[IR_{fruit}\left(\frac{0.64\ g}{kg\text{-}day}\right)\right] \times 70\ kg = 45\frac{g}{day}\ (wet\ weight)$$