

Appendix B

Analytical Laboratory Reports

This page intentionally left blank.



January 31, 2018

Mr. Eric Libolt
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Libolt,

On January 26th, 15 samples were received by our laboratory and assigned our laboratory project number EV18010159. The project was identified as your Jensen's Shipyard. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Glen Perry
Technical Manager



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-01
CLIENT SAMPLE ID	Shop Floor Drain-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 10:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	190	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	U	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	2.2	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	19	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	56	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	2.9	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	100	2.7	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	101	01/26/2018	SNC
TFT	EPA-8021	113	01/26/2018	SNC
C25	NWTPH-DX	110	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-02
CLIENT SAMPLE ID	Shop Floor Drain-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 10:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	0.021	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	1.9	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	12	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	29	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	1.9	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	29	2.7	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	109	01/26/2018	SNC
TFT	EPA-8021	117	01/26/2018	SNC
C25	NWTPH-DX	109	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-03
CLIENT SAMPLE ID	Shop Floor Drain-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	5300	500	20	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	7800	1000	20	MG/KG	01/29/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Acetone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	01/29/2018	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	01/29/2018	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Toluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-03
CLIENT SAMPLE ID	Shop Floor Drain-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Tetrachloroethylene	EPA-8260	17	10	1	UG/KG	01/29/2018	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	01/29/2018	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	01/29/2018	DLC
Styrene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
N-Propyl Benzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
S-Butyl Benzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
P-Isopropyltoluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
N-Butylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Naphthalene	EPA-8270 SIM	52	0.020	1	UG/KG	01/26/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	85	0.020	1	UG/KG	01/26/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	76	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-03
CLIENT SAMPLE ID	Shop Floor Drain-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Fluorene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Phenanthrene	EPA-8270 SIM	270	0.020	1	UG/KG	01/26/2018	PAB
Anthracene	EPA-8270 SIM	210	0.020	1	UG/KG	01/26/2018	PAB
Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Pyrene	EPA-8270 SIM	790	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	410	0.020	1	UG/KG	01/26/2018	PAB
Chrysene	EPA-8270 SIM	630	0.020	1	UG/KG	01/26/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Pyridine	EPA-8270	U	230	1	UG/KG	01/31/2018	PAB
N-Nitrosodimethylamine	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
Phenol	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
Aniline	EPA-8270	U	270	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethyl)Ether	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
2-Chlorophenol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
1,3-Dichlorobenzene	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
1,4-Dichlorobenzene	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
Benzyl Alcohol	EPA-8270	490	170	1	UG/KG	01/31/2018	PAB
1,2-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylphenol	EPA-8270	6600	160	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	190	1	UG/KG	01/31/2018	PAB
3&4-Methylphenol	EPA-8270	2900	210	1	UG/KG	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine	EPA-8270	U	240	1	UG/KG	01/31/2018	PAB
Hexachloroethane	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
Nitrobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Isophorone	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
2-Nitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dimethylphenol	EPA-8270	2600	100	1	UG/KG	01/31/2018	PAB
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethoxy)Methane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dichlorophenol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
1,2,4-Trichlorobenzene	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Naphthalene	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
4-Chloroaniline	EPA-8270	U	320	1	UG/KG	01/31/2018	PAB
2,6-Dichlorophenol	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-03
CLIENT SAMPLE ID	Shop Floor Drain-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Hexachlorobutadiene	EPA-8270	U	220	1	UG/KG	01/31/2018	PAB
4-Chloro-3-Methylphenol	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
2-Methylnaphthalene	EPA-8270	100	100	1	UG/KG	01/31/2018	PAB
1-Methylnaphthalene	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Hexachlorocyclopentadiene	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
2,4,6-Trichlorophenol	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
2,4,5-Trichlorophenol	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthylene	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Dimethylphthalate	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
2,6-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthene	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
3-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dinitrophenol	EPA-8270	U	300	1	UG/KG	01/31/2018	PAB
4-Nitrophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Dibenzofuran	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
2,4-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,3,4,6-Tetrachlorophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Diethylphthalate	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Fluorene	EPA-8270	U	190	1	UG/KG	01/31/2018	PAB
4-Chlorophenyl-Phenylether	EPA-8270	U	210	1	UG/KG	01/31/2018	PAB
4-Nitroaniline	EPA-8270	U	390	1	UG/KG	01/31/2018	PAB
4,6-Dinitro-2-Methylphenol	EPA-8270	U	340	1	UG/KG	01/31/2018	PAB
N-Nitrosodiphenylamine	EPA-8270	U	180	1	UG/KG	01/31/2018	PAB
Azobenzene	EPA-8270	U	180	1	UG/KG	01/31/2018	PAB
4-Bromophenyl-Phenylether	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Hexachlorobenzene	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
Pentachlorophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Phenanthrene	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
Anthracene	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
Carbazole	EPA-8270	U	330	1	UG/KG	01/31/2018	PAB
Di-N-Butylphthalate	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
Fluoranthene	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Pyrene	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
Butylbenzylphthalate	EPA-8270	U	190	1	UG/KG	01/31/2018	PAB
3,3-Dichlorobenzidine	EPA-8270	U	810	1	UG/KG	01/31/2018	PAB
Benzo[A]Anthracene	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
Chrysene	EPA-8270	300	180	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-03
CLIENT SAMPLE ID	Shop Floor Drain-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 11:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Bis(2-Ethylhexyl)Phthalate	EPA-8270	5300	140	1	UG/KG	01/31/2018	PAB
Di-N-Octylphthalate	EPA-8270	U	190	1	UG/KG	01/31/2018	PAB
Benzo[B]Fluoranthene	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Benzo[K]Fluoranthene	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Benzo[A]Pyrene	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270	180	130	1	UG/KG	01/31/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270	390	190	1	UG/KG	01/31/2018	PAB
Mercury	EPA-7471	0.25	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	22	1.1	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	57	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	350	0.58	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	8800	10	100	MG/KG	01/29/2018	RAL
Lead	EPA-6020	10000	10	100	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	7100	79	100	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	80.9	01/26/2018	SNC
TFT	EPA-8021	84.2	01/26/2018	SNC
C25 20X Dilution	NWTPH-DX	121	01/29/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	106	01/29/2018	DLC
Toluene-d8	EPA-8260	125	01/29/2018	DLC
4-Bromofluorobenzene	EPA-8260	114	01/29/2018	DLC
Terphenyl-d14	EPA-8270 SIM	78.5	01/26/2018	PAB
2-Fluorophenol	EPA-8270	89.3	01/31/2018	PAB
Phenol-d5	EPA-8270	90.5	01/31/2018	PAB
Nitrobenzene-d5	EPA-8270	73.8	01/31/2018	PAB
2-Fluorobiphenyl	EPA-8270	85.6	01/31/2018	PAB
2,4,6-Tribromophenol	EPA-8270	122	01/31/2018	PAB
Terphenyl-d14	EPA-8270	76.2	01/31/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-04
CLIENT SAMPLE ID	OPAICO Pad	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	130	50	1	MG/KG	01/29/2018	EBS
PCB-1016	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
Mercury	EPA-7471	0.15	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	7.1	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	2.2	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	40	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	1100	5.0	50	MG/KG	01/29/2018	RAL
Lead	EPA-6020	530	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	2300	29	50	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
TFT	NWTPH-GX	118	01/26/2018	SNC
TFT	EPA-8021	132	01/26/2018	SNC
C25	NWTPH-DX	107	01/29/2018	EBS
TCMX	EPA-8082	86.4	01/30/2018	PAB
DCB	EPA-8082	90.6	01/30/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-05
CLIENT SAMPLE ID	Stormwater Pond	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 1:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS ANALYSIS	
						DATE	BY
Mercury	EPA-7471	0.15	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	10	6.5	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	10	2.0	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	43	3.3	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	12000	10	25	MG/KG	01/29/2018	RAL
Lead	EPA-6020	450	2.1	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	2400	22	5	MG/KG	01/29/2018	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-06
CLIENT SAMPLE ID	BLWA-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 1:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	160	50	2	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	470	100	2	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	0.81	0.10	5	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	11	1.0	5	MG/KG	01/29/2018	RAL
Arsenic	EPA-6020	12	10	50	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	1.3	0.50	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	5.0	50	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	35	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	30	5.0	50	MG/KG	01/29/2018	RAL
Copper	EPA-6020	6700	5.0	50	MG/KG	01/29/2018	RAL
Lead	EPA-6020	700	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	660	5.0	50	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	950	29	50	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 2X Dilution	NWTPH-DX	123	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-07
CLIENT SAMPLE ID	BLWA-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 1:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	170	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX	300	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	0.39	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	7.1	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	0.94	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	20	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	6100	5.0	50	MG/KG	01/29/2018	RAL
Lead	EPA-6020	350	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	1700	28	50	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	183 DS3	01/29/2018	EBS

DS3 - Surrogate outside of control limits due to coeluting compounds.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-08
CLIENT SAMPLE ID	FDA-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 9:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	0.028	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	3.5	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	41	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	16	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	6.4	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	30	3.2	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	122	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-09
CLIENT SAMPLE ID	FDA-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	U	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	8.7	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	21	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	79	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	52	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	270	2.8	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	117	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-10
CLIENT SAMPLE ID	FDA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:35:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	420	50	1	MG/KG	01/29/2018	EBS
Mercury	EPA-7471	0.16	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	3.5	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	22	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	29	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	190	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	220	3.0	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	99.8	01/29/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-11
CLIENT SAMPLE ID	UST-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 8:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	01/26/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	01/26/2018	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	111	01/26/2018	SNC
TFT	EPA-8021	127	01/26/2018	SNC
C25	NWTPH-DX	89.8	01/26/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-12
CLIENT SAMPLE ID	UST-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	01/26/2018	EBS
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	01/26/2018	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	108	01/26/2018	SNC
TFT	EPA-8021	123	01/26/2018	SNC
C25	NWTPH-DX	81.2	01/26/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-13
CLIENT SAMPLE ID	SRWA-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Diesel Range	NWTPH-DX w/ SGA	180	50	2	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	1100	100	2	MG/KG	01/29/2018	EBS
Naphthalene	EPA-8270 SIM	12	0.020	1	UG/KG	01/26/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	6.7	0.020	1	UG/KG	01/26/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	5.2	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthylene	EPA-8270 SIM	95	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthene	EPA-8270 SIM	12	0.020	1	UG/KG	01/26/2018	PAB
Fluorene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Phenanthrene	EPA-8270 SIM	250	0.020	1	UG/KG	01/26/2018	PAB
Anthracene	EPA-8270 SIM	110	0.020	1	UG/KG	01/26/2018	PAB
Fluoranthene	EPA-8270 SIM	670	0.020	1	UG/KG	01/26/2018	PAB
Pyrene	EPA-8270 SIM	650	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	370	0.020	1	UG/KG	01/26/2018	PAB
Chrysene	EPA-8270 SIM	480	0.020	1	UG/KG	01/26/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	710	0.020	1	UG/KG	01/26/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	470	0.020	1	UG/KG	01/26/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	360	0.020	1	UG/KG	01/26/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	94	0.020	1	UG/KG	01/26/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	570	0.020	1	UG/KG	01/26/2018	PAB
Pyridine	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
N-Nitrosodimethylamine	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Phenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Aniline	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethyl)Ether	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Chlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,3-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,4-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Benzyl Alcohol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
1,2-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
3&4-Methylphenol	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Hexachloroethane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Nitrobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Isophorone	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-13
CLIENT SAMPLE ID	SRWA-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethoxy)Methane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Naphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
4-Chloroaniline	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
2,6-Dichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorobutadiene	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
4-Chloro-3-Methylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylnaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1-Methylnaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorocyclopentadiene	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
2,4,6-Trichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4,5-Trichlorophenol	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthylene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Dimethylphthalate	EPA-8270	290	110	1	UG/KG	01/31/2018	PAB
2,6-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
3-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dinitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
4-Nitrophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Dibenzofuran	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,3,4,6-Tetrachlorophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Diethylphthalate	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Fluorene	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
4-Chlorophenyl-Phenylether	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
4,6-Dinitro-2-Methylphenol	EPA-8270	U	210	1	UG/KG	01/31/2018	PAB
N-Nitrosodiphenylamine	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Azobenzene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Pentachlorophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Phenanthrene	EPA-8270	290	100	1	UG/KG	01/31/2018	PAB
Anthracene	EPA-8270	100	100	1	UG/KG	01/31/2018	PAB
Carbazole	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-13
CLIENT SAMPLE ID	SRWA-1	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Di-N-Butylphthalate	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Fluoranthene	EPA-8270	790	110	1	UG/KG	01/31/2018	PAB
Pyrene	EPA-8270	650	100	1	UG/KG	01/31/2018	PAB
Butylbenzylphthalate	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
3,3-Dichlorobenzidine	EPA-8270	U	510	1	UG/KG	01/31/2018	PAB
Benzo[A]Anthracene	EPA-8270	400	100	1	UG/KG	01/31/2018	PAB
Chrysene	EPA-8270	530	110	1	UG/KG	01/31/2018	PAB
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Di-N-Octylphthalate	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
Benzo[B]Fluoranthene	EPA-8270	810	110	1	UG/KG	01/31/2018	PAB
Benzo[K]Fluoranthene	EPA-8270	280	110	1	UG/KG	01/31/2018	PAB
Benzo[A]Pyrene	EPA-8270	520	100	1	UG/KG	01/31/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270	400	100	1	UG/KG	01/31/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270	110	100	1	UG/KG	01/31/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270	520	120	1	UG/KG	01/31/2018	PAB
Mercury	EPA-7471	13	0.80	40	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	30	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	0.54	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	29	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	2400	5.0	50	MG/KG	01/29/2018	RAL
Lead	EPA-6020	920	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	840	30	50	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25 2X Dilution	NWTPH-DX w/ SGA	105	01/29/2018	EBS
Terphenyl-d14	EPA-8270 SIM	79.9	01/26/2018	PAB
2-Fluorophenol	EPA-8270	85.8	01/31/2018	PAB
Phenol-d5	EPA-8270	83.9	01/31/2018	PAB
Nitrobenzene-d5	EPA-8270	75.8	01/31/2018	PAB
2-Fluorobiphenyl	EPA-8270	80.3	01/31/2018	PAB
2,4,6-Tribromophenol	EPA-8270	86.3	01/31/2018	PAB
Terphenyl-d14	EPA-8270	89.7	01/31/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains weathered diesel and lube oil.
 Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-14
CLIENT SAMPLE ID	SRWA-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	91	25	1	MG/KG	01/27/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	220	50	1	MG/KG	01/27/2018	EBS
Naphthalene	EPA-8270 SIM	7.1	0.020	1	UG/KG	01/26/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	4.1	0.020	1	UG/KG	01/26/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	5.2	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthylene	EPA-8270 SIM	77	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Fluorene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Phenanthrene	EPA-8270 SIM	130	0.020	1	UG/KG	01/26/2018	PAB
Anthracene	EPA-8270 SIM	53	0.020	1	UG/KG	01/26/2018	PAB
Fluoranthene	EPA-8270 SIM	210	0.020	1	UG/KG	01/26/2018	PAB
Pyrene	EPA-8270 SIM	210	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	110	0.020	1	UG/KG	01/26/2018	PAB
Chrysene	EPA-8270 SIM	120	0.020	1	UG/KG	01/26/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	200	0.020	1	UG/KG	01/26/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	140	0.020	1	UG/KG	01/26/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	120	0.020	1	UG/KG	01/26/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	190	0.020	1	UG/KG	01/26/2018	PAB
Pyridine	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
N-Nitrosodimethylamine	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Phenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Aniline	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethyl)Ether	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Chlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,3-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,4-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Benzyl Alcohol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
1,2-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
3&4-Methylphenol	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Hexachloroethane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Nitrobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Isophorone	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-14
CLIENT SAMPLE ID	SRWA-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethoxy)Methane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,2,4-Trichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Naphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
4-Chloroaniline	EPA-8270	U	190	1	UG/KG	01/31/2018	PAB
2,6-Dichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorobutadiene	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
4-Chloro-3-Methylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylnaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1-Methylnaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorocyclopentadiene	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
2,4,6-Trichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4,5-Trichlorophenol	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthylene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Dimethylphthalate	EPA-8270	640	110	1	UG/KG	01/31/2018	PAB
2,6-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Acenaphthene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
3-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dinitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
4-Nitrophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Dibenzofuran	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,3,4,6-Tetrachlorophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Diethylphthalate	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Fluorene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
4-Chlorophenyl-Phenylether	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
4-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
4,6-Dinitro-2-Methylphenol	EPA-8270	U	210	1	UG/KG	01/31/2018	PAB
N-Nitrosodiphenylamine	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Azobenzene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
4-Bromophenyl-Phenylether	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Hexachlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Pentachlorophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Phenanthrene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Anthracene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Carbazole	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-14
CLIENT SAMPLE ID	SRWA-2	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 12:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Di-N-Butylphthalate	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Fluoranthene	EPA-8270	110	110	1	UG/KG	01/31/2018	PAB
Pyrene	EPA-8270	100	100	1	UG/KG	01/31/2018	PAB
Butylbenzylphthalate	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
3,3-Dichlorobenzidine	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Benzo[A]Anthracene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Chrysene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Di-N-Octylphthalate	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Benzo[B]Fluoranthene	EPA-8270	130	110	1	UG/KG	01/31/2018	PAB
Benzo[K]Fluoranthene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Benzo[A]Pyrene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270	140	110	1	UG/KG	01/31/2018	PAB
Mercury	EPA-7471	6.3	0.40	20	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	14	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL
Chromium	EPA-6020	18	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	1100	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	1000	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	330	2.8	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
C25	NWTPH-DX w/ SGA	93.2	01/27/2018	EBS
Terphenyl-d14	EPA-8270 SIM	107	01/26/2018	PAB
2-Fluorophenol	EPA-8270	74.6	01/31/2018	PAB
Phenol-d5	EPA-8270	71.9	01/31/2018	PAB
Nitrobenzene-d5	EPA-8270	66.7	01/31/2018	PAB
2-Fluorobiphenyl	EPA-8270	71.9	01/31/2018	PAB
2,4,6-Tribromophenol	EPA-8270	81.3	01/31/2018	PAB
Terphenyl-d14	EPA-8270	80.5	01/31/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel and lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-15
CLIENT SAMPLE ID	SRWA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
TPH-Volatile Range	NWTPH-GX	84	3.0	1	MG/KG	01/26/2018	SNC
Benzene	EPA-8021	U	0.030	1	MG/KG	01/26/2018	SNC
Toluene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	01/26/2018	SNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	01/26/2018	SNC
TPH-Diesel Range	NWTPH-DX w/ SGA	3900	50	2	MG/KG	01/29/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	940	100	2	MG/KG	01/29/2018	EBS
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Carbon Disulfide	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Acetone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	01/29/2018	DLC
Acrylonitrile	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2-Butanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Benzene	EPA-8260	U	5.0	1	UG/KG	01/29/2018	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
Toluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-15
CLIENT SAMPLE ID	SRWA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
2-Hexanone	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	01/29/2018	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	01/29/2018	DLC
Styrene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Isopropylbenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
N-Propyl Benzene	EPA-8260	17	10	1	UG/KG	01/29/2018	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	240	62	1	UG/KG	01/29/2018	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
T-Butyl Benzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	610	67	1	UG/KG	01/29/2018	DLC
S-Butyl Benzene	EPA-8260	33	10	1	UG/KG	01/29/2018	DLC
P-Isopropyltoluene	EPA-8260	33	10	1	UG/KG	01/29/2018	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
N-Butylbenzene	EPA-8260	55	10	1	UG/KG	01/29/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	01/29/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Naphthalene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	01/29/2018	DLC
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	1200	0.020	1	UG/KG	01/26/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	900	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Acenaphthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-15
CLIENT SAMPLE ID	SRWA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
Fluorene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Phenanthrene	EPA-8270 SIM	620	0.020	1	UG/KG	01/26/2018	PAB
Anthracene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Fluoranthene	EPA-8270 SIM	620	0.020	1	UG/KG	01/26/2018	PAB
Pyrene	EPA-8270 SIM	570	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	210	0.020	1	UG/KG	01/26/2018	PAB
Chrysene	EPA-8270 SIM	340	0.020	1	UG/KG	01/26/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	430	0.020	1	UG/KG	01/26/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	220	0.020	1	UG/KG	01/26/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	150	0.020	1	UG/KG	01/26/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/KG	01/26/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	170	0.020	1	UG/KG	01/26/2018	PAB
Pyridine	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
N-Nitrosodimethylamine	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Phenol	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
Aniline	EPA-8270	U	230	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethyl)Ether	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
2-Chlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,3-Dichlorobenzene	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
1,4-Dichlorobenzene	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
Benzyl Alcohol	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
1,2-Dichlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Methylphenol	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
3&4-Methylphenol	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine	EPA-8270	U	200	1	UG/KG	01/31/2018	PAB
Hexachloroethane	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Nitrobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Isophorone	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dimethylphenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Benzoic Acid	EPA-8270	U	1000	1	UG/KG	01/31/2018	PAB
Bis(2-Chloroethoxy)Methane	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2,4-Dichlorophenol	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
1,2,4-Trichlorobenzene	EPA-8270	U	120	1	UG/KG	01/31/2018	PAB
4-Chloroaniline	EPA-8270	U	260	1	UG/KG	01/31/2018	PAB
2,6-Dichlorophenol	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Hexachlorobutadiene	EPA-8270	U	180	1	UG/KG	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-15
CLIENT SAMPLE ID	SRWA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS	ANALYSIS
						DATE	BY
4-Chloro-3-Methylphenol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
Hexachlorocyclopentadiene	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
2,4,6-Trichlorophenol	EPA-8270	U	110	1	UG/KG	01/31/2018	PAB
2,4,5-Trichlorophenol	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
2-Chloronaphthalene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
2-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Dimethylphthalate	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
2,6-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
3-Nitroaniline	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,4-Dinitrophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
4-Nitrophenol	EPA-8270	U	500	1	UG/KG	01/31/2018	PAB
Dibenzofuran	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
2,4-Dinitrotoluene	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
2,3,4,6-Tetrachlorophenol	EPA-8270	U	250	1	UG/KG	01/31/2018	PAB
Diethylphthalate	EPA-8270	U	140	1	UG/KG	01/31/2018	PAB
4-Chlorophenyl-Phenylether	EPA-8270	U	170	1	UG/KG	01/31/2018	PAB
4-Nitroaniline	EPA-8270	U	320	1	UG/KG	01/31/2018	PAB
4,6-Dinitro-2-Methylphenol	EPA-8270	U	290	1	UG/KG	01/31/2018	PAB
N-Nitrosodiphenylamine	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
Azobenzene	EPA-8270	U	150	1	UG/KG	01/31/2018	PAB
4-Bromophenyl-Phenylether	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Hexachlorobenzene	EPA-8270	U	100	1	UG/KG	01/31/2018	PAB
Carbazole	EPA-8270	U	270	1	UG/KG	01/31/2018	PAB
Di-N-Butylphthalate	EPA-8270	U	130	1	UG/KG	01/31/2018	PAB
Butylbenzylphthalate	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
3,3-Dichlorobenzidine	EPA-8270	U	680	1	UG/KG	01/31/2018	PAB
Bis(2-Ethylhexyl)Phthalate	EPA-8270	210	130	1	UG/KG	01/31/2018	PAB
Di-N-Octylphthalate	EPA-8270	U	160	1	UG/KG	01/31/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1254	EPA-8082	0.35	0.10	1	MG/KG	01/30/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	01/30/2018	PAB
Mercury	EPA-7471	0.54	0.020	1	MG/KG	01/30/2018	RAL
Arsenic	EPA-6020	17	1.0	5	MG/KG	01/29/2018	RAL
Cadmium	EPA-6020	U	0.50	5	MG/KG	01/29/2018	RAL



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS JOB#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18010159-15
CLIENT SAMPLE ID	SRWA-3	DATE RECEIVED:	01/26/2018
		COLLECTION DATE:	1/24/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium	EPA-6020	21	0.50	5	MG/KG	01/29/2018	RAL
Copper	EPA-6020	690	0.50	5	MG/KG	01/29/2018	RAL
Lead	EPA-6020	90	0.50	5	MG/KG	01/29/2018	RAL
Zinc	EPA-6020	580	3.4	5	MG/KG	01/29/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	119	01/26/2018	SNC
TFT	EPA-8021	122	01/26/2018	SNC
C25 2X Dilution	NWTPH-DX w/ SGA	122	01/29/2018	EBS
1,2-Dichloroethane-d4	EPA-8260	92.2	01/29/2018	DLC
1,2-Dichloroethane-d4	EPA-8260	92.9	01/29/2018	DLC
Toluene-d8	EPA-8260	103	01/29/2018	DLC
Toluene-d8	EPA-8260	114	01/29/2018	DLC
4-Bromofluorobenzene	EPA-8260	88.3	01/29/2018	DLC
4-Bromofluorobenzene	EPA-8260	86.2	01/29/2018	DLC
Terphenyl-d14	EPA-8270 SIM	82.8	01/26/2018	PAB
2-Fluorophenol	EPA-8270	74.3	01/31/2018	PAB
Phenol-d5	EPA-8270	73.3	01/31/2018	PAB
Nitrobenzene-d5	EPA-8270	68.3	01/31/2018	PAB
2-Fluorobiphenyl	EPA-8270	72.8	01/31/2018	PAB
2,4,6-Tribromophenol	EPA-8270	80.0	01/31/2018	PAB
Terphenyl-d14	EPA-8270	74.7	01/31/2018	PAB
TCMX	EPA-8082	83.7	01/30/2018	PAB
DCB	EPA-8082	94.8	01/30/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered gasoline, diesel and lube oil.
 Gasoline range product results biased high due to semivolatile range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MBG-012618S - Batch 124728 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	01/26/2018	SNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012618S - Batch 124728 - Soil by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	MG/KG	0.030	01/26/2018	SNC
Toluene	EPA-8021	U	MG/KG	0.050	01/26/2018	SNC
Ethylbenzene	EPA-8021	U	MG/KG	0.050	01/26/2018	SNC
Xylenes	EPA-8021	U	MG/KG	0.20	01/26/2018	SNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012518S - Batch 124740 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	01/25/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	01/25/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012918S - Batch 124751 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Chloromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Vinyl Chloride	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Bromomethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Chloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Carbon Tetrachloride	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Trichlorofluoromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Carbon Disulfide	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Acetone	EPA-8260	U	UG/KG	50	01/29/2018	DLC
1,1-Dichloroethene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Methylene Chloride	EPA-8260	U	UG/KG	20	01/29/2018	DLC
Acrylonitrile	EPA-8260	U	UG/KG	50	01/29/2018	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1-Dichloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
2-Butanone	EPA-8260	U	UG/KG	50	01/29/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-012918S - Batch 124751 - Soil by EPA-8260

Cis-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
2,2-Dichloropropane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Bromochloromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Chloroform	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1-Dichloropropene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2-Dichloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Benzene	EPA-8260	U	UG/KG	5.0	01/29/2018	DLC
Trichloroethene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2-Dichloropropane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Dibromomethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Bromodichloromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
4-Methyl-2-Pentanone	EPA-8260	U	UG/KG	50	01/29/2018	DLC
Toluene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
2-Hexanone	EPA-8260	U	UG/KG	50	01/29/2018	DLC
1,3-Dichloropropane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Tetrachloroethylene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Dibromochloromethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2-Dibromoethane	EPA-8260	U	UG/KG	5.0	01/29/2018	DLC
Chlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	01/29/2018	DLC
Styrene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
o-Xylene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Bromoform	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Isopropylbenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Bromobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
N-Propyl Benzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
2-Chlorotoluene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,3,5-Trimethylbenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
4-Chlorotoluene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
T-Butyl Benzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2,4-Trimethylbenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
S-Butyl Benzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
P-Isopropyltoluene	EPA-8260	U	UG/KG	10	01/29/2018	DLC



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-012918S - Batch 124751 - Soil by EPA-8260

1,3-Dichlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
N-Butylbenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/KG	50	01/29/2018	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Hexachlorobutadiene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
Naphthalene	EPA-8260	U	UG/KG	10	01/29/2018	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/KG	10	01/29/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012618S - Batch 124759 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	3.2	01/26/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	3.9	01/26/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	3.2	01/26/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	UG/KG	2.8	01/26/2018	PAB
Acenaphthene	EPA-8270 SIM	U	UG/KG	2.6	01/26/2018	PAB
Fluorene	EPA-8270 SIM	U	UG/KG	3.8	01/26/2018	PAB
Phenanthrene	EPA-8270 SIM	U	UG/KG	5.1	01/26/2018	PAB
Anthracene	EPA-8270 SIM	U	UG/KG	4.3	01/26/2018	PAB
Fluoranthene	EPA-8270 SIM	U	UG/KG	4.1	01/26/2018	PAB
Pyrene	EPA-8270 SIM	U	UG/KG	4.5	01/26/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	3.3	01/26/2018	PAB
Chrysene	EPA-8270 SIM	U	UG/KG	4.5	01/26/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	4.4	01/26/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	3.6	01/26/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	3.5	01/26/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	4.2	01/26/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	5.0	01/26/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	5.6	01/26/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-013018S - Batch 124860 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Pyridine	EPA-8270	U	UG/KG	200	01/31/2018	PAB
N-Nitrosodimethylamine	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Phenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225

DATE: 1/31/2018
 ALS SDG#: EV18010159
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
 CLIENT PROJECT: Jensen's Shipyard

LABORATORY BLANK RESULTS

MB-013018S - Batch 124860 - Soil by EPA-8270

Aniline	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Bis(2-Chloroethyl)Ether	EPA-8270	U	UG/KG	120	01/31/2018	PAB
2-Chlorophenol	EPA-8270	U	UG/KG	120	01/31/2018	PAB
1,3-Dichlorobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
1,4-Dichlorobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzyl Alcohol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
1,2-Dichlorobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2-Methylphenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Bis(2-Chloroisopropyl)Ether	EPA-8270	U	UG/KG	160	01/31/2018	PAB
3&4-Methylphenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine	EPA-8270	U	UG/KG	120	01/31/2018	PAB
Hexachloroethane	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Nitrobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Isophorone	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2-Nitrophenol	EPA-8270	U	UG/KG	250	01/31/2018	PAB
2,4-Dimethylphenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzoic Acid	EPA-8270	U	UG/KG	1000	01/31/2018	PAB
Bis(2-Chloroethoxy)Methane	EPA-8270	U	UG/KG	150	01/31/2018	PAB
2,4-Dichlorophenol	EPA-8270	U	UG/KG	310	01/31/2018	PAB
1,2,4-Trichlorobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Naphthalene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
4-Chloroaniline	EPA-8270	U	UG/KG	710	01/31/2018	PAB
2,6-Dichlorophenol	EPA-8270	U	UG/KG	230	01/31/2018	PAB
Hexachlorobutadiene	EPA-8270	U	UG/KG	160	01/31/2018	PAB
4-Chloro-3-Methylphenol	EPA-8270	U	UG/KG	400	01/31/2018	PAB
2-Methylnaphthalene	EPA-8270	U	UG/KG	190	01/31/2018	PAB
1-Methylnaphthalene	EPA-8270	U	UG/KG	220	01/31/2018	PAB
Hexachlorocyclopentadiene	EPA-8270	U	UG/KG	500	01/31/2018	PAB
2,4,6-Trichlorophenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2,4,5-Trichlorophenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2-Chloronaphthalene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2-Nitroaniline	EPA-8270	U	UG/KG	250	01/31/2018	PAB
Acenaphthylene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Dimethylphthalate	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2,6-Dinitrotoluene	EPA-8270	U	UG/KG	250	01/31/2018	PAB
Acenaphthene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
3-Nitroaniline	EPA-8270	U	UG/KG	720	01/31/2018	PAB
2,4-Dinitrophenol	EPA-8270	U	UG/KG	250	01/31/2018	PAB
4-Nitrophenol	EPA-8270	U	UG/KG	500	01/31/2018	PAB
Dibenzofuran	EPA-8270	U	UG/KG	100	01/31/2018	PAB
2,4-Dinitrotoluene	EPA-8270	U	UG/KG	250	01/31/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225

DATE: 1/31/2018
 ALS SDG#: EV18010159
 WDOE ACCREDITATION: C601

CLIENT CONTACT: Eric Libolt
 CLIENT PROJECT: Jensen's Shipyard

LABORATORY BLANK RESULTS

MB-013018S - Batch 124860 - Soil by EPA-8270

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
2,3,4,6-Tetrachlorophenol	EPA-8270	U	UG/KG	250	01/31/2018	PAB
Diethylphthalate	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Fluorene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
4-Chlorophenyl-Phenylether	EPA-8270	U	UG/KG	100	01/31/2018	PAB
4-Nitroaniline	EPA-8270	U	UG/KG	250	01/31/2018	PAB
4,6-Dinitro-2-Methylphenol	EPA-8270	U	UG/KG	100	01/31/2018	PAB
N-Nitrosodiphenylamine	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Azobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
4-Bromophenyl-Phenylether	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Hexachlorobenzene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Pentachlorophenol	EPA-8270	U	UG/KG	500	01/31/2018	PAB
Phenanthrene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Anthracene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Carbazole	EPA-8270	U	UG/KG	130	01/31/2018	PAB
Di-N-Butylphthalate	EPA-8270	U	UG/KG	130	01/31/2018	PAB
Fluoranthene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Pyrene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Butylbenzylphthalate	EPA-8270	U	UG/KG	100	01/31/2018	PAB
3,3-Dichlorobenzidine	EPA-8270	U	UG/KG	250	01/31/2018	PAB
Benzo[A]Anthracene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Chrysene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Bis(2-Ethylhexyl)Phthalate	EPA-8270	U	UG/KG	130	01/31/2018	PAB
Di-N-Octylphthalate	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzo[B]Fluoranthene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzo[K]Fluoranthene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzo[A]Pyrene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270	U	UG/KG	100	01/31/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270	U	UG/KG	100	01/31/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012918S - Batch 124813 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1221	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1232	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1242	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1248	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1254	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
PCB-1260	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MB-012918S - Batch 124813 - Soil by EPA-8082

PCB-1268	EPA-8082	U	MG/KG	0.10	01/29/2018	PAB
----------	----------	---	-------	------	------------	-----

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-309968 - Batch R309968 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	01/30/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-012918S - Batch 124814 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	01/29/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	01/29/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	01/29/2018	RAL
Copper	EPA-6020	U	MG/KG	0.10	01/29/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	01/29/2018	RAL
Zinc	EPA-6020	U	MG/KG	0.50	01/29/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 124728 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	89.0			66.5	122.7	01/26/2018	SNC
TPH-Volatile Range - BSD	NWTPH-GX	86.4	3		66.5	122.7	01/26/2018	SNC

ALS Test Batch ID: 124728 - Soil by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzene - BS	EPA-8021	112			67.7	124	01/26/2018	SNC
Benzene - BSD	EPA-8021	111	1		67.7	124	01/26/2018	SNC
Toluene - BS	EPA-8021	115			71	123	01/26/2018	SNC
Toluene - BSD	EPA-8021	113	2		71	123	01/26/2018	SNC
Ethylbenzene - BS	EPA-8021	115			69.8	117	01/26/2018	SNC
Ethylbenzene - BSD	EPA-8021	114	0		69.8	117	01/26/2018	SNC
Xylenes - BS	EPA-8021	113			70	119	01/26/2018	SNC
Xylenes - BSD	EPA-8021	114	0		70	119	01/26/2018	SNC

ALS Test Batch ID: 124740 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	107			75.5	122.1	01/25/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	101	5		75.5	122.1	01/25/2018	EBS

ALS Test Batch ID: 124751 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
1,1-Dichloroethene - BS	EPA-8260	86.3			73	138	01/29/2018	DLC
1,1-Dichloroethene - BSD	EPA-8260	84.6	2		73	138	01/29/2018	DLC
Benzene - BS	EPA-8260	101			75	138	01/29/2018	DLC
Benzene - BSD	EPA-8260	97.8	3		75	138	01/29/2018	DLC
Trichloroethene - BS	EPA-8260	102			75	136	01/29/2018	DLC
Trichloroethene - BSD	EPA-8260	99.0	3		75	136	01/29/2018	DLC
Toluene - BS	EPA-8260	102			76	134	01/29/2018	DLC
Toluene - BSD	EPA-8260	98.7	3		76	134	01/29/2018	DLC
Chlorobenzene - BS	EPA-8260	102			79	128	01/29/2018	DLC
Chlorobenzene - BSD	EPA-8260	101	1		79	128	01/29/2018	DLC

ALS Test Batch ID: 124759 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	89.4			49.2	140	01/26/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BSD	EPA-8270 SIM	83.4	7		49.2	140	01/29/2018	PAB
Acenaphthene - BS	EPA-8270 SIM	91.8			55	147	01/26/2018	PAB
Acenaphthene - BSD	EPA-8270 SIM	82.8	10		55	147	01/29/2018	PAB
Pyrene - BS	EPA-8270 SIM	92.2			47.9	176	01/26/2018	PAB
Pyrene - BSD	EPA-8270 SIM	104	12		47.9	176	01/29/2018	PAB
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	88.2			40.4	143	01/26/2018	PAB
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	98.1	11		40.4	143	01/29/2018	PAB

ALS Test Batch ID: 124860 - Soil by EPA-8270

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Phenol - BS	EPA-8270	67.4			36.1	131	01/31/2018	PAB
Phenol - BSD	EPA-8270	67.4	0		36.1	131	01/31/2018	PAB
2-Chlorophenol - BS	EPA-8270	65.2			59.9	111	01/31/2018	PAB
2-Chlorophenol - BSD	EPA-8270	65.4	0		59.9	111	01/31/2018	PAB
1,4-Dichlorobenzene - BS	EPA-8270	65.1			44.3	122	01/31/2018	PAB
1,4-Dichlorobenzene - BSD	EPA-8270	65.5	1		44.3	122	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine - BS	EPA-8270	65.9			31.6	134	01/31/2018	PAB
N-Nitroso-Di-N-Propylamine - BSD	EPA-8270	67.4	2		31.6	134	01/31/2018	PAB
1,2,4-Trichlorobenzene - BS	EPA-8270	67.2			44.6	122	01/31/2018	PAB
1,2,4-Trichlorobenzene - BSD	EPA-8270	66.5	1		44.6	122	01/31/2018	PAB
4-Chloro-3-Methylphenol - BS	EPA-8270	59.5			49.2	135	01/31/2018	PAB
4-Chloro-3-Methylphenol - BSD	EPA-8270	59.2	1		49.2	135	01/31/2018	PAB
Acenaphthene - BS	EPA-8270	67.4			49.3	117	01/31/2018	PAB
Acenaphthene - BSD	EPA-8270	65.9	2		49.3	117	01/31/2018	PAB
4-Nitrophenol - BS	EPA-8270	54.0			29.8	137	01/31/2018	PAB
4-Nitrophenol - BSD	EPA-8270	52.8	2		29.8	137	01/31/2018	PAB
2,4-Dinitrotoluene - BS	EPA-8270	61.8			55.3	130	01/31/2018	PAB
2,4-Dinitrotoluene - BSD	EPA-8270	58.6	5		55.3	130	01/31/2018	PAB
Pentachlorophenol - BS	EPA-8270	64.7			41.3	113	01/31/2018	PAB
Pentachlorophenol - BSD	EPA-8270	61.2	6		41.3	113	01/31/2018	PAB
Pyrene - BS	EPA-8270	68.3			57.4	145	01/31/2018	PAB
Pyrene - BSD	EPA-8270	63.6	7		48.9	150	01/31/2018	PAB

ALS Test Batch ID: 124813 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	90.2			50	150	01/29/2018	PAB
PCB-1016 - BSD	EPA-8082	84.1	7		50	150	01/29/2018	PAB
PCB-1260 - BS	EPA-8082	92.3			50	150	01/29/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	1/31/2018
CLIENT CONTACT:	Eric Libolt	ALS SDG#:	EV18010159
CLIENT PROJECT:	Jensen's Shipyard	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1260 - BSD	EPA-8082	88.1	5		50	150	01/29/2018	PAB

ALS Test Batch ID: R309968 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	109			81.8	117	01/30/2018	RAL
Mercury - BSD	EPA-7471	108	1		81.8	117	01/30/2018	RAL

ALS Test Batch ID: 124814 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	96.2			80	120	01/29/2018	RAL
Arsenic - BSD	EPA-6020	96.6	0		80	120	01/29/2018	RAL
Cadmium - BS	EPA-6020	96.5			80	120	01/29/2018	RAL
Cadmium - BSD	EPA-6020	95.3	1		80	120	01/29/2018	RAL
Chromium - BS	EPA-6020	97.3			80	120	01/29/2018	RAL
Chromium - BSD	EPA-6020	97.3	0		80	120	01/29/2018	RAL
Copper - BS	EPA-6020	96.8			80	120	01/29/2018	RAL
Copper - BSD	EPA-6020	96.8	0		80	120	01/29/2018	RAL
Lead - BS	EPA-6020	96.3			80	120	01/29/2018	RAL
Lead - BSD	EPA-6020	94.4	2		80	120	01/29/2018	RAL
Zinc - BS	EPA-6020	95.5			80	119	01/29/2018	RAL
Zinc - BSD	EPA-6020	95.8	0		80	119	01/29/2018	RAL

APPROVED BY

Technical Manager



ALS Environmental
 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV18010159

Date 1/25/18 Page 1 of 2

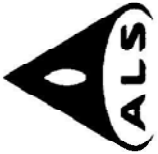
PROJECT ID: Jensen's Shipyard
 REPORT TO COMPANY: Whitcomb Environmental Services
 PROJECT MANAGER: Eric Libolt
 ADDRESS: 228 E. Champion St. #101
Bellingham, WA 98225
 PHONE: 360-752-9571 FAX: 360-752-9573
 P.O. #: _____ E-MAIL: el@whitcomb.com
 INVOICE TO COMPANY: _____
 ATTENTION: SAME AS ABOVE
 ADDRESS: _____

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	ANALYSIS REQUESTED										OTHER (Specify)				NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?																
					NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021*	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semi-volatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Metals-MTC-A-5*	Metals-Other (Specify)			TCLP-Metals	VOA	Semi-Vol	Pest	Herbs											
1. Shop Floor Drain-1	1/24/18	10:20	SOIL	1	X	X	X	X								X								X									4			
2. Shop Floor Drain-2		10:40		2	X	X	X	X								X									X										4	
3. Shop Floor Drain-3		11:15		3	X	X	X	X			X					X									X										4	
4. OPAICO Pad		12:45		4	X	X	X	X								X									X										4	
5. Stormwater Pond		1:10		5																					X										3	
6. BLWA-1		1:30		6	X	X	X	X								X									X										1	
7. BLWA-2		1:45		7	X	X	X	X								X									X										1	
8. FDA-1		9:15		8												X									X										1	
9. FDA-2		2:15		9												X									X										1	
10. FDA-3		2:35		10												X									X										2	

SPECIAL INSTRUCTIONS: Hold extra volume for possible further analysis- 10As filled via SOSS-

SIGNATURES (Name, Company, Date, Time):
 1. Relinquished By: [Signature] Whitcomb Environmental Services, 1/25/18, 12:30PM
 Received By: _____
 2. Relinquished By: [Signature] Shawn Coburn ALS, 1/26/18, 9:25am
 Received By: _____

TURNAROUND REQUESTED in Business Days*
 OTHER:
 Organic, Metals & Inorganic Analysis: 10 5 3 2 1 1 1 1
SAMPLES STANDARD SAME DAY
 Fuels & Hydrocarbon Analysis: 5 3 1 1 1 1
SAMPLES STANDARD SAME DAY
 Specify: 10 5 3 2 1 1 1 1
10 5 3 2 1 1 1 1
SAMPLES STANDARD SAME DAY
10 5 3 2 1 1 1 1
SAMPLES STANDARD SAME DAY
 *Turnaround request less than standard may incur Rush Charges



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job#

EX18010159

Date 1/25/18 Page 7 of 2

PROJECT ID: Jensen's Shipyard
REPORT TO COMPANY: Whatcom Environmental Services
PROJECT MANAGER: Eric Libelt
ADDRESS: 228 E. Champion St. #101
Bellingham, WA 98225
PHONE: 360-752-9571 FAX: 360-752-9573
P.O. #: E-MAIL: elibelt@whatcom.com
INVOICE TO COMPANY: SAME AS ABOVE
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED				OTHER (Specify)																		
NMTPH-HCID	NMTPH-DX	NMTPH-GX	BTEX by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?	
1. UST-1	X	X	X						X	X	X									2		
2. UST-2	X	X	X						X	X	X									2		
3. SRWA-1									X	X	X									1		
4. SRWA-2									X	X	X									1		
5. SRWA-3									X	X	X									4		
6.																						
7.																						
8.																						
9.																						
10.																						

SPECIAL INSTRUCTIONS: Hold extra Volume for possible further analysis - Vats filled in 5035

SIGNATURES (Name, Company, Date/Time):
 1. Relinquished By: *[Signature]*, WES 1/25/18, 12:30pm
 Received By: *[Signature]*
 2. Relinquished By: *[Signature]*, AW 1/26/18 9:25a
 Received By: *[Signature]*

TURNAROUND REQUESTED in Business Days*
 OTHER:
 Organic, Metals & Inorganic Analysis
 10 Standard 5 3 2 1 SAME DAY
 Fuels & Hydrocarbon Analysis
 5 Standard 3 1 1 SAME DAY

Specify: *Blank Volume in Same Surplus*

*Turnaround request less than standard may incur Rush Charges

APPENDIX C

Laboratory Analytical Data Reports – Marine Sediment



ALS Environmental



CHAIN OF CUSTODY
87030

001

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 638-1068
www.alsglobal.com

SR# KA801446
COC Set _____ of _____
COC# _____

Page 1 of 2

Project Name: Jensen Shipyard Sediment
 Project Manager: Dan Heimbigner
 Company: Whatcom Environmental Services
 Address: 228 E Champion Street, #101
 Phone #: (360) 752-9571
 Sampler Signature: [Signature]
 Sampler Printed Name: Dan Heimbigner (W.E.S.)

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS										REMARKS		
					160.4 Modified / TVS	350.1M / NH3 Plumb	9030M / Guide	9081B / PEST OC LL	9082A / PCB LL	9270D / SVO LL	Buy/In's / BU/TY/LTINS	7471B / Hg	9060 / TOC	5020A / Metals T		ASTM D422M / Particle	PSEP TS / PSEP TS
1. SED-1		2-12-18	12:10		X	X	X	X	X	X	X	X	X	X	X	X	
2. SED-2		2-12-18	11:50		X	X	X	X	X	X	X	X	X	X	X	X	
3. SED-3		2-12-18	12:45		X	X	X	X	X	X	X	X	X	X	X	X	
4. SED-4		2-12-18	1:05		X	X	X	X	X	X	X	X	X	X	X	X	
5. SED-5		2-12-18	12:35		X	X	X	X	X	X	X	X	X	X	X	X	
6. SED-6		2-12-18	12:20		X	X	X	X	X	X	X	X	X	X	X	X	See comments
7. SED-7		2-12-18	1:35		X	X	X	X	X	X	X	X	X	X	X	X	
8. SED-8		2-12-18	1:40		X	X	X	X	X	X	X	X	X	X	X	X	
9. SED-9		2-12-18	1:45		X	X	X	X	X	X	X	X	X	X	X	X	
10. SED-10		2-12-18	2:00		X	X	X	X	X	X	X	X	X	X	X	X	

Report Requirements
 I. Routine Report: Method Blank, Surrogate, as required
 II. Report Dup., MS, MSD as required
 III. CLP Like Summary (no raw data)
 IV. Data Validation Report
 V. EDD

Invoice Information
 P.O.# _____
 Bill To: W.E.S.

Turnaround Requirements
 24 hr.
 5 Day
 Standard
 Requested Report Date _____

Special Instructions/Comments:
 Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg
 Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg
 *Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)

Relinquished By:
 Signature: [Signature]
 Printed Name: Dan Heimbigner
 Firm: W.E.S.
 Date/Time: 2-13-18 2:45

Received By:
 Signature: [Signature]
 Printed Name: [Name]
 Firm: [Firm]
 Date/Time: _____

Please homogenize sample material (32 oz jars) prior to analysis.
Please run MS/MSD on sample SED-6 if adequate sample volume remains after primary analysis.



Environmental Services



CHAIN OF CUSTODY
87030

001

SR# K1801446
COC Set of
COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1058
www.alsglobal.com

Page 2 of 2

Project Name: **Jensen Shipyard Sediment**
 Project Manager: **Dan Heimbigner**
 Company: **Whatcom Environmental Services**
 Address: **228 E Champion Street, #101**
 Phone #: **(360) 752-9571**
 Sampler Signature: *[Signature]*
 email: **dheimbigne@whatcomenvironmental.com**
 Sampler Printed Name: **Dan Heimbigner (W.E.S.)**

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS										Remarks						
					7D	14D	28D	180D	1	2	3	4	5	6		7	8	9	10		
1. SED-11		2-12-18	2:10		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2. SED-12		2-12-18	2:15		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3. SED-13		2-12-18	2:25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements
 I. Routine Report: Method Blank, Surrogate, as required
 II. Report Dup., MS, MSD as required
 III. CLP Like Summary (no raw data)
 IV. Data Validation Report
 V. EDD

Invoice Information
 P.O.#
 Bill To: W.E.S.

Turnaround Requirements
 24 hr. 48 hr.
 5 Day
 Standard

Requested Report Date:

Special Instructions/Comments:
 Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
 Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg
 *Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other (Circle One)
Please homogenize sample material (32 oz jars) prior to analysis.

Report Requirements
 I. Routine Report: Method Blank, Surrogate, as required
 II. Report Dup., MS, MSD as required
 III. CLP Like Summary (no raw data)
 IV. Data Validation Report
 V. EDD

Turnaround Requirements
 24 hr. 48 hr.
 5 Day
 Standard

Requested Report Date:

Reinquired By:	Received By:	Relinquished By:	Received By:
Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>
Printed Name: Dan Heimbigner	Printed Name: Dan Heimbigner	Printed Name: Dan Heimbigner	Printed Name: Dan Heimbigner
Firm: W.E.S.	Firm: W.E.S.	Firm: W.E.S.	Firm: W.E.S.
Date/Time: 2-13-18 / 2:45	Date/Time: 2-14-18 10:30	Date/Time: 2-14-18 10:30	Date/Time: 2-14-18 10:30



PC MK

Cooler Receipt and Preservation Form

Client WHATEAM ENVIRONMENTAL SERVICES Service Request K18 01446

Received: 2-14-18 Opened: 2-14-18 By: ASP Unloaded: 2-14-18 By: ASP

- 1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 TOP FRONT
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
-0.4	-0.5	0.8	0.7	-0.1	378	Cooler 1	12 129 F26 03 9438 4333		
0.9	0.7	1.1	0.9	-0.2	391	Cooler 2	12 129 F26 03 9440 6747		
0.6	0.5	1.8	1.7	-0.1	383	Cooler 3	12 129 F26 03 9445 8558		
-0.5	-0.5	0.5	0.5	0.0	360		12 129 F26 03 9393 5767		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Were samples received in good condition (temperature, unbroken)? NA Y N
If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Units: mg/Kg
Basis: Dry

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
SED-1	K1801446-001	4.4	1.0	0.09	1	03/02/18 10:28	2/16/18	
SED-2	K1801446-002	4.16	0.88	0.08	1	03/02/18 10:28	2/16/18	
SED-3	K1801446-003	6.1	1.2	0.10	1	03/02/18 10:28	2/16/18	
SED-4	K1801446-004	2.5	1.0	0.09	1	03/02/18 10:28	2/16/18	
SED-5	K1801446-005	10.8	1.3	0.2	1	03/02/18 10:28	2/16/18	
SED-6	K1801446-006	10.2	1.3	0.2	1	03/02/18 10:28	2/16/18	
SED-7	K1801446-007	4.57	0.76	0.07	1	03/02/18 10:28	2/16/18	
SED-8	K1801446-008	5.6	1.0	0.09	1	03/02/18 10:28	2/16/18	
SED-9	K1801446-009	7.3	1.3	0.2	1	03/02/18 10:28	2/16/18	
SED-10	K1801446-010	4.07	0.68	0.06	1	03/02/18 10:28	2/16/18	
SED-11	K1801446-011	5.83	0.94	0.08	1	03/02/18 10:28	2/16/18	
SED-12	K1801446-012	3.83	0.78	0.07	1	03/02/18 10:28	2/16/18	
SED-13	K1801446-013	4.37	0.66	0.06	1	03/02/18 10:28	2/16/18	
Method Blank	K1801446-MB	0.14 J	0.50	0.04	1	03/02/18 10:28	2/16/18	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/02/18

Triplicate Sample Summary
General Chemistry Parameters

Sample Name: SED-6 **Units:** mg/Kg
Lab Code: K1801446-006 **Basis:** Dry
Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Analyte Name	MRL	MDL	Sample Result	Duplicate K1801446-006DUP Result	Triplicate K1801446-006TRP Result	Average	RSD	RSD Limit
Ammonia as Nitrogen	1.3	0.2	10.2	11.1	11.2	10.8	5	32

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/02/18

Triplicate Sample Summary
General Chemistry Parameters

Sample Name: SED-11 **Units:** mg/Kg
Lab Code: K1801446-011 **Basis:** Dry
Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Analyte Name	MRL	MDL	Sample Result	Duplicate K1801446-011DUP Result	Triplicate K1801446-011TRP Result	Average	RSD	RSD Limit
Ammonia as Nitrogen	0.94	0.08	5.83	5.36	6.21	5.80	7	32

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/2/18
Date Extracted: 02/16/18

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Units: mg/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike K1801446-006MS		Duplicate Matrix Spike K1801446-006DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Ammonia as Nitrogen	10.2	1220	1310	92	1160	1320	87	55-135	5	32

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/2/18
Date Extracted: 02/16/18

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: SED-11
Lab Code: K1801446-011
Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Units: mg/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike K1801446-011MS		Duplicate Matrix Spike K1801446-011DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Ammonia as Nitrogen	5.83	854	929	91	857	930	92	55-135	<1	32

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/02/18
Date Extracted: 02/16/18

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method: 350.1M
Prep Method: EPA Plumb 5-1981 KCl

Units: mg/Kg
Basis: Dry
Analysis Lot: 582415

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1801446-LCS	5.99	6.17	97	90-110

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Continuing Calibration Verification (CCV) Summary

Ammonia as Nitrogen

Analysis Method: 350.1M

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	582415	KQ1802840-01	03/02/18 10:28	2.00	1.97	98	90-110
CCV2	582415	KQ1802840-02	03/02/18 10:28	2.00	1.96	98	90-110
CCV3	582415	KQ1802840-03	03/02/18 10:28	2.00	1.95	98	90-110
CCV4	582415	KQ1802840-04	03/02/18 10:28	2.00	1.94	97	90-110
CCV5	582415	KQ1802840-05	03/02/18 10:28	2.00	1.93	96	90-110

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Continuing Calibration Blank (CCB) Summary
Ammonia as Nitrogen

Analysis Method: 350.1M

Units: mg/Kg

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	582415	KQ1802840-06	03/02/18 10:28	0.50	0.04	0.16	J
CCB2	582415	KQ1802840-07	03/02/18 10:28	0.50	0.04	0.17	J
CCB3	582415	KQ1802840-08	03/02/18 10:28	0.50	0.04	0.19	J
CCB4	582415	KQ1802840-09	03/02/18 10:28	0.50	0.04	0.18	J
CCB5	582415	KQ1802840-10	03/02/18 10:28	0.50	0.04	0.24	J

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 9030M
Prep Method: EPA 9030B Modified

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Units: mg/Kg
Basis: Dry

Sulfide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
SED-1	K1801446-001	27.9	4.2	1.7	4	02/19/18 21:31	2/19/18	
SED-2	K1801446-002	3.34	0.89	0.36	1	02/19/18 21:31	2/19/18	
SED-3	K1801446-003	405	48	20	40	02/19/18 21:31	2/19/18	
SED-4	K1801446-004	2.5	1.0	0.5	1	02/19/18 21:31	2/19/18	
SED-5	K1801446-005	261	53	22	40	02/19/18 21:31	2/19/18	
SED-6	K1801446-006	29.8	5.3	2.2	4	02/19/18 21:31	2/19/18	
SED-7	K1801446-007	ND U	0.76	0.31	1	02/19/18 21:31	2/19/18	
SED-8	K1801446-008	4.9	1.0	0.5	1	02/19/18 21:31	2/19/18	
SED-9	K1801446-009	730	110	50	80	02/19/18 21:31	2/19/18	
SED-10	K1801446-010	709	56	23	80	02/19/18 21:31	2/19/18	
SED-11	K1801446-011	2.06	0.95	0.38	1	02/19/18 21:31	2/19/18	
SED-12	K1801446-012	29.0	3.1	1.3	4	02/19/18 21:31	2/19/18	
SED-13	K1801446-013	219	66	27	100	02/19/18 21:31	2/19/18	
Method Blank	K1801446-MB	ND U	0.50	0.20	1	02/19/18 21:31	2/19/18	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 02/19/18

Replicate Sample Summary
General Chemistry Parameters

Sample Name: SED-6 **Units:** mg/Kg
Lab Code: K1801446-006 **Basis:** Dry

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1801446-006DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Sulfide, Total	9030M	1.3	0.6	29.8	12.7	21.3	80 *	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 02/19/18
Date Extracted: 02/19/18

Duplicate Matrix Spike Summary
Sulfide, Total

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 9030M
Prep Method: EPA 9030B Modified

Units: mg/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike K1801446-006MS		Duplicate Matrix Spike K1801446-006DMS		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
Sulfide, Total	29.8	1380	1600	84	1380	1600	84	45-150	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 02/19/18
Date Extracted: 02/19/18

Lab Control Sample Summary
Sulfide, Total

Analysis Method: 9030M
Prep Method: EPA 9030B Modified

Units: mg/Kg
Basis: Dry
Analysis Lot: 580874

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1801446-LCS	6.85	7.36	93	55-130

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Continuing Calibration Verification (CCV) Summary

Sulfide, Total

Analysis Method: 9030M

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	580874	KQ1802564-01	02/19/18 21:31	1.84	1.85	100	90-110
CCV2	580874	KQ1802564-02	02/19/18 21:31	1.84	1.85	100	90-110
CCV3	580874	KQ1802564-03	02/19/18 21:31	1.84	1.85	100	90-110
CCV4	580874	KQ1802564-04	02/19/18 21:31	1.84	1.85	100	90-110
CCV5	580874	KQ1802564-05	02/19/18 21:31	1.84	1.85	100	90-110

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request:K1801446

Continuing Calibration Blank (CCB) Summary
Sulfide, Total

Analysis Method: 9030M

Units:mg/Kg

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	580874	KQ1802564-06	02/19/18 21:31	0.50	0.20	ND	U
CCB2	580874	KQ1802564-07	02/19/18 21:31	0.50	0.20	ND	U
CCB3	580874	KQ1802564-08	02/19/18 21:31	0.50	0.20	ND	U
CCB4	580874	KQ1802564-09	02/19/18 21:31	0.50	0.20	ND	U
CCB5	580874	KQ1802564-10	02/19/18 21:31	0.50	0.20	ND	U

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 9060
Prep Method: Method

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18

Units: Percent
Basis: Dry, per Method

Carbon, Total Organic (TOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
SED-1	K1801446-001	1.37	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-2	K1801446-002	0.80	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-3	K1801446-003	1.88	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-4	K1801446-004	1.81	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-5	K1801446-005	1.92	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-6	K1801446-006	2.21	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-7	K1801446-007	1.41	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-8	K1801446-008	2.54	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-9	K1801446-009	4.29	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-10	K1801446-010	1.26	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-11	K1801446-011	2.69	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-12	K1801446-012	1.03	0.10	0.02	1	03/08/18 13:20	3/8/18	
SED-13	K1801446-013	1.98	0.10	0.02	1	03/08/18 13:20	3/8/18	
Method Blank	K1801446-MB	ND U	0.10	0.02	1	03/08/18 13:20	3/8/18	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/08/18

Replicate Sample Summary
General Chemistry Parameters

Sample Name: SED-6
Lab Code: K1801446-006

Units: Percent
Basis: Dry, per Method

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1801446-006DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Carbon, Total Organic (TOC)	9060	0.10	0.02	2.21	2.22	2.22	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/8/18
Date Extracted: 03/8/18

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 9060
Prep Method: Method

Units: Percent
Basis: Dry, per Method

Analyte Name	Sample Result	Matrix Spike K1801446-006MS			Duplicate Matrix Spike K1801446-006DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Total Organic (TOC)	2.21	4.51	2.40	96	4.56	2.41	97	70-122	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/08/18
Date Extracted: 03/08/18

Lab Control Sample Summary
Carbon, Total Organic (TOC)

Analysis Method: 9060
Prep Method: Method

Units: Percent
Basis: Dry, per Method
Analysis Lot: 583023

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1801446-LCS	0.560	0.60	93	72-122

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic (TOC)

Analysis Method: 9060

Units: Percent

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	583023	KQ1803248-01	03/08/18 13:20	12.0	11.5	96	85-115
CCV2	583023	KQ1803248-02	03/08/18 13:20	12.0	11.5	96	85-115
CCV3	583023	KQ1803248-03	03/08/18 13:20	12.0	11.6	96	85-115

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request:K1801446

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic (TOC)

Analysis Method: 9060

Units:Percent

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	583023	KQ1803248-04	03/08/18 13:20	0.10	0.02	ND	U
CCB2	583023	KQ1803248-05	03/08/18 13:20	0.10	0.02	ND	U
CCB3	583023	KQ1803248-06	03/08/18 13:20	0.10	0.02	ND	U

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-1
Lab Code: K1801446-001

Sand Fraction: Dry Weight (Grams) 6.1958
Sand Fraction: Weight Recovered (Grams) 6.1363
Sand Fraction: Percent Recovery 99.04

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0353	0.21
Sand, Coarse	0 to 1 Ø	0.0630	0.38
Sand, Medium	1 to 2 Ø	0.2427	1.46
Sand, Fine	2 to 3 Ø	0.7202	4.33
Sand, Very Fine	3 to 4 Ø	2.5315	15.20
75.0 µm	4 Ø	7.2050	43.27
31.3 µm	5 Ø	1.4600	8.77
15.6 µm	6 Ø	1.1150	6.70
7.8 µm	7 Ø	0.7100	4.26
3.9 µm	8 Ø	0.7350	4.41
1.95 µm	9 Ø	0.4050	2.43
0.98 µm	> 10 Ø	1.0500	6.31
		16.2727	97.73

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-2
Lab Code: K1801446-002

Sand Fraction: Dry Weight (Grams) 6.5076
Sand Fraction: Weight Recovered (Grams) 6.4511
Sand Fraction: Percent Recovery 99.13

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0322	0.19
Sand, Coarse	0 to 1 Ø	0.0899	0.53
Sand, Medium	1 to 2 Ø	0.1703	1.00
Sand, Fine	2 to 3 Ø	0.7043	4.15
Sand, Very Fine	3 to 4 Ø	2.2172	13.08
75.0 µm	4 Ø	9.5000	56.03
31.3 µm	5 Ø	1.5200	8.96
15.6 µm	6 Ø	0.7100	4.19
7.8 µm	7 Ø	0.4150	2.45
3.9 µm	8 Ø	0.4250	2.51
1.95 µm	9 Ø	0.2750	1.62
0.98 µm	> 10 Ø	0.7700	4.54
		16.8289	99.25

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-3
Lab Code: K1801446-003

Sand Fraction: Dry Weight (Grams) 3.8391
Sand Fraction: Weight Recovered (Grams) 3.8569
Sand Fraction: Percent Recovery 100.46

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0165	0.13
Sand, Coarse	0 to 1 Ø	0.1337	1.02
Sand, Medium	1 to 2 Ø	0.3117	2.37
Sand, Fine	2 to 3 Ø	0.5281	4.02
Sand, Very Fine	3 to 4 Ø	1.2238	9.31
75.0 µm	4 Ø	5.7150	43.48
31.3 µm	5 Ø	1.3500	10.27
15.6 µm	6 Ø	1.1900	9.05
7.8 µm	7 Ø	0.6800	5.17
3.9 µm	8 Ø	0.8100	6.16
1.95 µm	9 Ø	0.4550	3.46
0.98 µm	> 10 Ø	0.9550	7.27
		13.3688	101.72

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-4
Lab Code: K1801446-004

Sand Fraction: Dry Weight (Grams) 6.9715
Sand Fraction: Weight Recovered (Grams) 6.8720
Sand Fraction: Percent Recovery 98.57

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	1.6492	10.85
Gravel, Fine	-2 Ø to -1 Ø	1.4887	9.79
Sand, Very Coarse	-1 to 0 Ø	0.4562	3.00
Sand, Coarse	0 to 1 Ø	0.4138	2.72
Sand, Medium	1 to 2 Ø	0.4480	2.95
Sand, Fine	2 to 3 Ø	0.7528	4.95
Sand, Very Fine	3 to 4 Ø	0.6075	4.00
75.0 µm	4 Ø	4.5700	30.07
31.3 µm	5 Ø	1.1850	7.80
15.6 µm	6 Ø	1.0400	6.84
7.8 µm	7 Ø	0.6850	4.51
3.9 µm	8 Ø	0.5850	3.85
1.95 µm	9 Ø	0.4550	2.99
0.98 µm	> 10 Ø	1.0250	6.74
		15.3612	101.06

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-5
Lab Code: K1801446-005

Sand Fraction: Dry Weight (Grams) 2.9058
Sand Fraction: Weight Recovered (Grams) 2.8154
Sand Fraction: Percent Recovery 96.89

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0621	0.52
Sand, Coarse	0 to 1 Ø	0.0463	0.39
Sand, Medium	1 to 2 Ø	0.0991	0.83
Sand, Fine	2 to 3 Ø	0.4348	3.64
Sand, Very Fine	3 to 4 Ø	0.8265	6.91
75.0 µm	4 Ø	4.8300	40.40
31.3 µm	5 Ø	1.6000	13.38
15.6 µm	6 Ø	1.3950	11.67
7.8 µm	7 Ø	0.6300	5.27
3.9 µm	8 Ø	0.6100	5.10
1.95 µm	9 Ø	0.4050	3.39
0.98 µm	> 10 Ø	0.9550	7.99
		11.8938	99.48

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-6
 Lab Code: K1801446-006

Sand Fraction: Dry Weight (Grams) 3.1094
 Sand Fraction: Weight Recovered (Grams) 3.0011
 Sand Fraction: Percent Recovery 96.52

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0602	0.53
Sand, Coarse	0 to 1 Ø	0.0413	0.36
Sand, Medium	1 to 2 Ø	0.1200	1.06
Sand, Fine	2 to 3 Ø	0.5314	4.68
Sand, Very Fine	3 to 4 Ø	0.6616	5.82
75.0 µm	4 Ø	3.8750	34.09
31.3 µm	5 Ø	1.9950	17.55
15.6 µm	6 Ø	1.4750	12.98
7.8 µm	7 Ø	0.8100	7.13
3.9 µm	8 Ø	0.5750	5.06
1.95 µm	9 Ø	0.3300	2.90
0.98 µm	> 10 Ø	0.8850	7.79
		11.3595	99.94

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-6
Lab Code: K1801446-006DUP

Sand Fraction: Dry Weight (Grams) 2.6077
Sand Fraction: Weight Recovered (Grams) 2.5980
Sand Fraction: Percent Recovery 99.63

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0000	0.00
Gravel, Fine	-2 Ø to -1 Ø	0.0065	0.06
Sand, Very Coarse	-1 to 0 Ø	0.0060	0.05
Sand, Coarse	0 to 1 Ø	0.0315	0.28
Sand, Medium	1 to 2 Ø	0.1093	0.96
Sand, Fine	2 to 3 Ø	0.5185	4.57
Sand, Very Fine	3 to 4 Ø	0.7522	6.63
75.0 µm	4 Ø	3.9850	35.12
31.3 µm	5 Ø	1.9450	17.14
15.6 µm	6 Ø	1.4450	12.74
7.8 µm	7 Ø	0.7150	6.30
3.9 µm	8 Ø	0.5000	4.41
1.95 µm	9 Ø	0.3250	2.86
0.98 µm	> 10 Ø	0.8650	7.62
		11.2040	98.74

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-7
 Lab Code: K1801446-007

Sand Fraction: Dry Weight (Grams) 21.4858
 Sand Fraction: Weight Recovered (Grams) 21.4162
 Sand Fraction: Percent Recovery 99.68

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	12.4181	44.87
Gravel, Fine	-2 Ø to -1 Ø	4.7085	17.01
Sand, Very Coarse	-1 to 0 Ø	0.6629	2.40
Sand, Coarse	0 to 1 Ø	0.6592	2.38
Sand, Medium	1 to 2 Ø	0.8715	3.15
Sand, Fine	2 to 3 Ø	1.4388	5.20
Sand, Very Fine	3 to 4 Ø	0.3496	1.26
75.0 µm	4 Ø	1.2350	4.46
31.3 µm	5 Ø	0.7650	2.76
15.6 µm	6 Ø	0.5500	1.99
7.8 µm	7 Ø	0.5200	1.88
3.9 µm	8 Ø	0.3900	1.41
1.95 µm	9 Ø	0.1850	0.67
0.98 µm	> 10 Ø	0.7700	2.78
		25.5236	92.22

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-8
Lab Code: K1801446-008

Sand Fraction: Dry Weight (Grams) 6.7217
Sand Fraction: Weight Recovered (Grams) 6.4069
Sand Fraction: Percent Recovery 95.32

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.1917	1.29
Gravel, Fine	-2 Ø to -1 Ø	0.0000	0.00
Sand, Very Coarse	-1 to 0 Ø	0.0370	0.25
Sand, Coarse	0 to 1 Ø	0.0789	0.53
Sand, Medium	1 to 2 Ø	0.0235	0.16
Sand, Fine	2 to 3 Ø	2.3386	15.78
Sand, Very Fine	3 to 4 Ø	1.9362	13.06
75.0 µm	4 Ø	5.2000	35.08
31.3 µm	5 Ø	1.6050	10.83
15.6 µm	6 Ø	0.7350	4.96
7.8 µm	7 Ø	0.8050	5.43
3.9 µm	8 Ø	0.4250	2.87
1.95 µm	9 Ø	0.2600	1.75
0.98 µm	> 10 Ø	0.7350	4.96
		14.3709	96.95

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-9
Lab Code: K1801446-009

Sand Fraction: Dry Weight (Grams) 19.5949
Sand Fraction: Weight Recovered (Grams) 19.5306
Sand Fraction: Percent Recovery 99.67

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	14.4552	72.39
Gravel, Fine	-2 Ø to -1 Ø	0.7241	3.63
Sand, Very Coarse	-1 to 0 Ø	0.3947	1.98
Sand, Coarse	0 to 1 Ø	0.4145	2.08
Sand, Medium	1 to 2 Ø	0.5244	2.63
Sand, Fine	2 to 3 Ø	1.5302	7.66
Sand, Very Fine	3 to 4 Ø	0.8916	4.47
75.0 µm	4 Ø	6.2450	31.28
31.3 µm	5 Ø	1.1100	5.56
15.6 µm	6 Ø	0.3800	1.90
7.8 µm	7 Ø	0.3150	1.58
3.9 µm	8 Ø	0.1800	0.90
1.95 µm	9 Ø	0.0050	0.03
0.98 µm	> 10 Ø	0.8850	4.43
		28.0547	140.50

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-10
Lab Code: K1801446-010

Sand Fraction: Dry Weight (Grams) 23.6762
Sand Fraction: Weight Recovered (Grams) 23.6146
Sand Fraction: Percent Recovery 99.74

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	7.9172	26.22
Gravel, Fine	-2 Ø to -1 Ø	6.4189	21.26
Sand, Very Coarse	-1 to 0 Ø	2.0151	6.67
Sand, Coarse	0 to 1 Ø	1.4886	4.93
Sand, Medium	1 to 2 Ø	1.4375	4.76
Sand, Fine	2 to 3 Ø	2.8171	9.33
Sand, Very Fine	3 to 4 Ø	0.9120	3.02
75.0 µm	4 Ø	2.2050	7.30
31.3 µm	5 Ø	0.9200	3.05
15.6 µm	6 Ø	0.7750	2.57
7.8 µm	7 Ø	0.3750	1.24
3.9 µm	8 Ø	0.3000	0.99
1.95 µm	9 Ø	0.1750	0.58
0.98 µm	> 10 Ø	0.5850	1.94
		28.3414	93.87

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-11
Lab Code: K1801446-011

Sand Fraction: Dry Weight (Grams) 8.4820
Sand Fraction: Weight Recovered (Grams) 8.3622
Sand Fraction: Percent Recovery 98.59

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0691	0.42
Gravel, Fine	-2 Ø to -1 Ø	0.0667	0.41
Sand, Very Coarse	-1 to 0 Ø	0.0682	0.42
Sand, Coarse	0 to 1 Ø	0.1858	1.13
Sand, Medium	1 to 2 Ø	0.4156	2.53
Sand, Fine	2 to 3 Ø	3.0741	18.75
Sand, Very Fine	3 to 4 Ø	2.4474	14.93
75.0 µm	4 Ø	6.1350	37.41
31.3 µm	5 Ø	0.9750	5.95
15.6 µm	6 Ø	0.5800	3.54
7.8 µm	7 Ø	0.4250	2.59
3.9 µm	8 Ø	0.3050	1.86
1.95 µm	9 Ø	0.2300	1.40
0.98 µm	> 10 Ø	0.6250	3.81
		15.6019	95.15

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-12
Lab Code: K1801446-012

Sand Fraction: Dry Weight (Grams) 12.3790
Sand Fraction: Weight Recovered (Grams) 12.3207
Sand Fraction: Percent Recovery 99.53

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	0.0989	0.47
Gravel, Fine	-2 Ø to -1 Ø	0.2404	1.15
Sand, Very Coarse	-1 to 0 Ø	0.3113	1.49
Sand, Coarse	0 to 1 Ø	0.4320	2.07
Sand, Medium	1 to 2 Ø	0.5059	2.42
Sand, Fine	2 to 3 Ø	4.2270	20.25
Sand, Very Fine	3 to 4 Ø	3.9187	18.78
75.0 µm	4 Ø	7.4550	35.72
31.3 µm	5 Ø	0.8500	4.07
15.6 µm	6 Ø	0.5100	2.44
7.8 µm	7 Ø	0.4000	1.92
3.9 µm	8 Ø	0.3300	1.58
1.95 µm	9 Ø	0.3000	1.44
0.98 µm	> 10 Ø	0.6250	2.99
		20.2042	96.81

dba ALS Environmental
Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 2/12/2018
Date Received: 2/14/2018
Date Analyzed: 2/28/2018

Particle Size Determination
ASTM D422M

Sample Name: SED-13
Lab Code: K1801446-013

Sand Fraction: Dry Weight (Grams) 23.1313
Sand Fraction: Weight Recovered (Grams) 23.1064
Sand Fraction: Percent Recovery 99.89

Description	Phi Size	Dry Weight (Grams)	Percent of Total Weight Recovered
Gravel, Medium	<-2 Ø	8.2441	30.54
Gravel, Fine	-2 Ø to -1 Ø	5.0551	18.73
Sand, Very Coarse	-1 to 0 Ø	2.1304	7.89
Sand, Coarse	0 to 1 Ø	1.6698	6.19
Sand, Medium	1 to 2 Ø	1.6702	6.19
Sand, Fine	2 to 3 Ø	2.9216	10.82
Sand, Very Fine	3 to 4 Ø	1.1289	4.18
75.0 µm	4 Ø	1.6700	6.19
31.3 µm	5 Ø	0.3150	1.17
15.6 µm	6 Ø	0.2650	0.98
7.8 µm	7 Ø	0.2450	0.91
3.9 µm	8 Ø	0.2300	0.85
1.95 µm	9 Ø	0.0200	0.07
0.98 µm	> 10 Ø	0.3550	1.32
		25.9201	96.03

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
SED-1	K1801446-001	47.3	-	-	1	02/26/18 12:30	
SED-2	K1801446-002	56.3	-	-	1	02/26/18 12:30	
SED-3	K1801446-003	42.1	-	-	1	02/26/18 12:30	
SED-4	K1801446-004	48.5	-	-	1	02/26/18 12:30	
SED-5	K1801446-005	37.5	-	-	1	02/26/18 12:30	
SED-6	K1801446-006	37.4	-	-	1	02/26/18 12:30	
SED-7	K1801446-007	66.0	-	-	1	02/26/18 12:30	
SED-8	K1801446-008	48.7	-	-	1	02/26/18 12:30	
SED-9	K1801446-009	37.5	-	-	1	02/26/18 12:30	
SED-10	K1801446-010	71.8	-	-	1	02/26/18 12:30	
SED-11	K1801446-011	52.9	-	-	1	02/26/18 12:30	
SED-12	K1801446-012	64.0	-	-	1	02/26/18 12:30	
SED-13	K1801446-013	75.6	-	-	1	02/26/18 12:30	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18

Units: Percent
Basis: As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
SED-6	K1801446-006DUP	-	37.4	37.4	37.4	<1	20	02/26/18
SED-13	K1801446-013DUP	-	75.6	73.3	74.5	3	20	02/26/18

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: 160.4 Modified
Prep Method: None

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18

Units: Percent
Basis: Dry, per Method

Solids, Total Volatile

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
SED-1	K1801446-001	4.80	0.10	-	1	02/26/18 20:54	
SED-2	K1801446-002	3.10	0.10	-	1	02/26/18 20:54	
SED-3	K1801446-003	6.20	0.10	-	1	02/26/18 20:54	
SED-4	K1801446-004	3.60	0.10	-	1	02/26/18 20:54	
SED-5	K1801446-005	6.40	0.10	-	1	02/26/18 20:54	
SED-6	K1801446-006	7.20	0.10	-	1	02/26/18 20:54	
SED-7	K1801446-007	3.10	0.10	-	1	02/26/18 20:54	
SED-8	K1801446-008	6.20	0.10	-	1	02/26/18 20:54	
SED-9	K1801446-009	11.3	0.10	-	1	02/26/18 20:54	
SED-10	K1801446-010	3.40	0.10	-	1	02/26/18 20:54	
SED-11	K1801446-011	6.50	0.10	-	1	02/26/18 20:54	
SED-12	K1801446-012	3.40	0.10	-	1	02/26/18 20:54	
SED-13	K1801446-013	4.20	0.10	-	1	02/26/18 20:54	
Method Blank	K1801446-MB	ND U	0.10	-	1	02/26/18 20:54	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 02/26/18

Replicate Sample Summary
General Chemistry Parameters

Sample Name: SED-6
Lab Code: K1801446-006

Units: Percent
Basis: Dry, per Method

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1801446-006DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Solids, Total Volatile	160.4 Modified	0.10	-	7.20	7.40	7.30	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: PSEP TS
Prep Method: None

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
SED-1	K1801446-001	47.3	-	-	1	02/26/18 12:30	
SED-2	K1801446-002	56.3	-	-	1	02/26/18 12:30	
SED-3	K1801446-003	42.1	-	-	1	02/26/18 12:30	
SED-4	K1801446-004	48.5	-	-	1	02/26/18 12:30	
SED-5	K1801446-005	37.5	-	-	1	02/26/18 12:30	
SED-6	K1801446-006	37.4	-	-	1	02/26/18 12:30	
SED-7	K1801446-007	66.0	-	-	1	02/26/18 12:30	
SED-8	K1801446-008	48.7	-	-	1	02/26/18 12:30	
SED-9	K1801446-009	37.5	-	-	1	02/26/18 12:30	
SED-10	K1801446-010	71.8	-	-	1	02/26/18 12:30	
SED-11	K1801446-011	52.9	-	-	1	02/26/18 12:30	
SED-12	K1801446-012	64.0	-	-	1	02/26/18 12:30	
SED-13	K1801446-013	75.6	-	-	1	02/26/18 12:30	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Analysis Method: PSEP TS
Prep Method: None

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18

Units: Percent
Basis: As Received

Replicate Sample Summary
Solids, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
SED-6	K1801446-006DUP	-	37.4	37.4	37.4	<1	10	02/26/18
SED-13	K1801446-013DUP	-	75.6	73.3	74.5	3	10	02/26/18

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-1
Lab Code: K1801446-001

Service Request: K1801446
Date Collected: 02/12/18 12:10
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.092	mg/Kg	0.052	0.021	5	03/05/18 11:32	03/02/18	
Arsenic	6020A	8.47	mg/Kg	0.52	0.04	5	03/05/18 11:32	03/02/18	
Cadmium	6020A	1.15	mg/Kg	0.021	0.007	5	03/05/18 11:32	03/02/18	
Chromium	6020A	32.7	mg/Kg	0.21	0.06	5	03/05/18 11:32	03/02/18	
Copper	6020A	32.8	mg/Kg	0.52	0.04	5	03/05/18 11:32	03/02/18	
Lead	6020A	12.0	mg/Kg	0.052	0.021	5	03/05/18 11:32	03/02/18	
Mercury	7471B	0.067	mg/Kg	0.013	0.001	1	02/28/18 12:04	02/27/18	
Nickel	6020A	25.0	mg/Kg	0.21	0.03	5	03/05/18 11:32	03/02/18	
Silver	6020A	0.101	mg/Kg	0.021	0.004	5	03/05/18 11:32	03/02/18	
Zinc	6020A	96.1	mg/Kg	0.52	0.21	5	03/05/18 11:32	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-2
Lab Code: K1801446-002

Service Request: K1801446
Date Collected: 02/12/18 11:50
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.036 J	mg/Kg	0.040	0.016	5	03/05/18 11:35	03/02/18	
Arsenic	6020A	4.84	mg/Kg	0.40	0.03	5	03/05/18 11:35	03/02/18	
Cadmium	6020A	1.45	mg/Kg	0.016	0.006	5	03/05/18 11:35	03/02/18	
Chromium	6020A	21.9	mg/Kg	0.16	0.05	5	03/05/18 11:35	03/02/18	
Copper	6020A	14.0	mg/Kg	0.40	0.03	5	03/05/18 11:35	03/02/18	
Lead	6020A	4.36	mg/Kg	0.040	0.016	5	03/05/18 11:35	03/02/18	
Mercury	7471B	0.035	mg/Kg	0.012	0.001	1	02/28/18 11:19	02/27/18	
Nickel	6020A	16.7	mg/Kg	0.16	0.02	5	03/05/18 11:35	03/02/18	
Silver	6020A	0.052	mg/Kg	0.016	0.003	5	03/05/18 11:35	03/02/18	
Zinc	6020A	53.1	mg/Kg	0.40	0.16	5	03/05/18 11:35	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-3
Lab Code: K1801446-003

Service Request: K1801446
Date Collected: 02/12/18 12:45
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.083	mg/Kg	0.056	0.022	5	03/05/18 11:37	03/02/18	
Arsenic	6020A	7.39	mg/Kg	0.56	0.04	5	03/05/18 11:37	03/02/18	
Cadmium	6020A	1.53	mg/Kg	0.022	0.008	5	03/05/18 11:37	03/02/18	
Chromium	6020A	33.9	mg/Kg	0.22	0.07	5	03/05/18 11:37	03/02/18	
Copper	6020A	42.1	mg/Kg	0.56	0.04	5	03/05/18 11:37	03/02/18	
Lead	6020A	13.6	mg/Kg	0.056	0.022	5	03/05/18 11:37	03/02/18	
Mercury	7471B	0.081	mg/Kg	0.014	0.001	1	02/28/18 11:20	02/27/18	
Nickel	6020A	25.2	mg/Kg	0.22	0.03	5	03/05/18 11:37	03/02/18	
Silver	6020A	0.099	mg/Kg	0.022	0.004	5	03/05/18 11:37	03/02/18	
Zinc	6020A	95.9	mg/Kg	0.56	0.22	5	03/05/18 11:37	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-4
Lab Code: K1801446-004

Service Request: K1801446
Date Collected: 02/12/18 13:05
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.067	mg/Kg	0.050	0.020	5	03/05/18 11:46	03/02/18	
Arsenic	6020A	6.19	mg/Kg	0.50	0.04	5	03/05/18 11:46	03/02/18	
Cadmium	6020A	2.50	mg/Kg	0.020	0.007	5	03/05/18 11:46	03/02/18	
Chromium	6020A	32.7	mg/Kg	0.20	0.06	5	03/05/18 11:46	03/02/18	
Copper	6020A	36.6	mg/Kg	0.50	0.04	5	03/05/18 11:46	03/02/18	
Lead	6020A	16.8	mg/Kg	0.050	0.020	5	03/05/18 11:46	03/02/18	
Mercury	7471B	0.078	mg/Kg	0.011	0.001	1	02/28/18 11:22	02/27/18	
Nickel	6020A	25.6	mg/Kg	0.20	0.03	5	03/05/18 11:46	03/02/18	
Silver	6020A	0.090	mg/Kg	0.020	0.004	5	03/05/18 11:46	03/02/18	
Zinc	6020A	78.1	mg/Kg	0.50	0.20	5	03/05/18 11:46	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-5
Lab Code: K1801446-005

Service Request: K1801446
Date Collected: 02/12/18 12:35
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.161	mg/Kg	0.059	0.024	5	03/05/18 11:49	03/02/18	
Arsenic	6020A	9.51	mg/Kg	0.59	0.05	5	03/05/18 11:49	03/02/18	
Cadmium	6020A	2.05	mg/Kg	0.024	0.008	5	03/05/18 11:49	03/02/18	
Chromium	6020A	34.1	mg/Kg	0.24	0.07	5	03/05/18 11:49	03/02/18	
Copper	6020A	62.8	mg/Kg	0.59	0.05	5	03/05/18 11:49	03/02/18	
Lead	6020A	17.1	mg/Kg	0.059	0.024	5	03/05/18 11:49	03/02/18	
Mercury	7471B	0.100	mg/Kg	0.016	0.002	1	02/28/18 11:23	02/27/18	
Nickel	6020A	25.4	mg/Kg	0.24	0.04	5	03/05/18 11:49	03/02/18	
Silver	6020A	0.126	mg/Kg	0.024	0.005	5	03/05/18 11:49	03/02/18	
Zinc	6020A	109	mg/Kg	0.59	0.24	5	03/05/18 11:49	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-6
Lab Code: K1801446-006

Service Request: K1801446
Date Collected: 02/12/18 12:20
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.071	mg/Kg	0.058	0.023	5	03/05/18 11:17	03/02/18	
Arsenic	6020A	7.06	mg/Kg	0.58	0.05	5	03/05/18 11:17	03/02/18	
Cadmium	6020A	1.87	mg/Kg	0.023	0.008	5	03/05/18 11:17	03/02/18	
Chromium	6020A	27.9	mg/Kg	0.23	0.07	5	03/05/18 11:17	03/02/18	
Copper	6020A	41.6	mg/Kg	0.58	0.05	5	03/05/18 11:17	03/02/18	
Lead	6020A	12.5	mg/Kg	0.058	0.023	5	03/05/18 11:17	03/02/18	
Mercury	7471B	0.094	mg/Kg	0.019	0.002	1	02/28/18 11:25	02/27/18	
Nickel	6020A	20.0	mg/Kg	0.23	0.03	5	03/05/18 11:17	03/02/18	
Silver	6020A	0.099	mg/Kg	0.023	0.005	5	03/05/18 11:17	03/02/18	
Zinc	6020A	78.0	mg/Kg	0.58	0.23	5	03/05/18 11:17	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-7
Lab Code: K1801446-007

Service Request: K1801446
Date Collected: 02/12/18 13:35
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.122	mg/Kg	0.027	0.011	5	03/05/18 11:52	03/02/18	
Arsenic	6020A	6.11	mg/Kg	0.27	0.02	5	03/05/18 11:52	03/02/18	
Cadmium	6020A	0.096	mg/Kg	0.011	0.004	5	03/05/18 11:52	03/02/18	
Chromium	6020A	22.2	mg/Kg	0.11	0.03	5	03/05/18 11:52	03/02/18	
Copper	6020A	82.3	mg/Kg	0.27	0.02	5	03/05/18 11:52	03/02/18	
Lead	6020A	26.5	mg/Kg	0.027	0.011	5	03/05/18 11:52	03/02/18	
Mercury	7471B	0.0848	mg/Kg	0.0069	0.0007	1	02/28/18 11:35	02/27/18	
Nickel	6020A	15.7	mg/Kg	0.11	0.02	5	03/05/18 11:52	03/02/18	
Silver	6020A	0.127	mg/Kg	0.011	0.002	5	03/05/18 11:52	03/02/18	
Zinc	6020A	92.0	mg/Kg	0.27	0.11	5	03/05/18 11:52	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-8
Lab Code: K1801446-008

Service Request: K1801446
Date Collected: 02/12/18 13:40
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.189	mg/Kg	0.041	0.017	5	03/05/18 11:55	03/02/18	
Arsenic	6020A	8.12	mg/Kg	0.41	0.03	5	03/05/18 11:55	03/02/18	
Cadmium	6020A	1.51	mg/Kg	0.017	0.006	5	03/05/18 11:55	03/02/18	
Chromium	6020A	34.4	mg/Kg	0.17	0.05	5	03/05/18 11:55	03/02/18	
Copper	6020A	202	mg/Kg	0.41	0.03	5	03/05/18 11:55	03/02/18	
Lead	6020A	59.9	mg/Kg	0.041	0.017	5	03/05/18 11:55	03/02/18	
Mercury	7471B	0.275	mg/Kg	0.013	0.001	1	02/28/18 11:36	02/27/18	
Nickel	6020A	21.3	mg/Kg	0.17	0.02	5	03/05/18 11:55	03/02/18	
Silver	6020A	0.129	mg/Kg	0.017	0.003	5	03/05/18 11:55	03/02/18	
Zinc	6020A	141	mg/Kg	0.41	0.17	5	03/05/18 11:55	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-9
Lab Code: K1801446-009

Service Request: K1801446
Date Collected: 02/12/18 13:45
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.275	mg/Kg	0.053	0.021	5	03/05/18 11:57	03/02/18	
Arsenic	6020A	12.8	mg/Kg	0.53	0.04	5	03/05/18 11:57	03/02/18	
Cadmium	6020A	2.01	mg/Kg	0.021	0.007	5	03/05/18 11:57	03/02/18	
Chromium	6020A	50.9	mg/Kg	0.21	0.06	5	03/05/18 11:57	03/02/18	
Copper	6020A	578	mg/Kg	0.53	0.04	5	03/05/18 11:57	03/02/18	
Lead	6020A	106	mg/Kg	0.053	0.021	5	03/05/18 11:57	03/02/18	
Mercury	7471B	0.353	mg/Kg	0.010	0.001	1	02/28/18 11:38	02/27/18	
Nickel	6020A	24.0	mg/Kg	0.21	0.03	5	03/05/18 11:57	03/02/18	
Silver	6020A	0.149	mg/Kg	0.021	0.004	5	03/05/18 11:57	03/02/18	
Zinc	6020A	206	mg/Kg	0.53	0.21	5	03/05/18 11:57	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-10
Lab Code: K1801446-010

Service Request: K1801446
Date Collected: 02/12/18 14:00
Date Received: 02/14/18 10:30

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.913	mg/Kg	0.025	0.010	5	03/05/18 12:00	03/02/18	
Arsenic	6020A	9.02	mg/Kg	0.25	0.02	5	03/05/18 12:00	03/02/18	
Cadmium	6020A	0.611	mg/Kg	0.0099	0.0035	5	03/05/18 12:00	03/02/18	
Chromium	6020A	22.4	mg/Kg	0.099	0.030	5	03/05/18 12:00	03/02/18	
Copper	6020A	1370	mg/Kg	49	4	1000	03/05/18 12:12	03/02/18	
Lead	6020A	105	mg/Kg	0.025	0.010	5	03/05/18 12:00	03/02/18	
Mercury	7471B	1.45	mg/Kg	0.090	0.009	10	02/28/18 12:07	02/27/18	
Nickel	6020A	14.5	mg/Kg	0.099	0.015	5	03/05/18 12:00	03/02/18	
Silver	6020A	0.0986	mg/Kg	0.0099	0.0020	5	03/05/18 12:00	03/02/18	
Zinc	6020A	589	mg/Kg	49	20	1000	03/05/18 12:12	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-11
Lab Code: K1801446-011

Service Request: K1801446
Date Collected: 02/12/18 14:10
Date Received: 02/14/18 10:30
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.323	mg/Kg	0.038	0.015	5	03/05/18 12:03	03/02/18	
Arsenic	6020A	9.42	mg/Kg	0.38	0.03	5	03/05/18 12:03	03/02/18	
Cadmium	6020A	1.29	mg/Kg	0.015	0.005	5	03/05/18 12:03	03/02/18	
Chromium	6020A	25.5	mg/Kg	0.15	0.05	5	03/05/18 12:03	03/02/18	
Copper	6020A	168	mg/Kg	0.38	0.03	5	03/05/18 12:03	03/02/18	
Lead	6020A	109	mg/Kg	0.038	0.015	5	03/05/18 12:03	03/02/18	
Mercury	7471B	0.438	mg/Kg	0.024	0.002	5	02/28/18 12:08	02/27/18	
Nickel	6020A	16.5	mg/Kg	0.15	0.02	5	03/05/18 12:03	03/02/18	
Silver	6020A	0.093	mg/Kg	0.015	0.003	5	03/05/18 12:03	03/02/18	
Zinc	6020A	116	mg/Kg	0.38	0.15	5	03/05/18 12:03	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-12
Lab Code: K1801446-012

Service Request: K1801446
Date Collected: 02/12/18 14:15
Date Received: 02/14/18 10:30

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	0.103	mg/Kg	0.039	0.016	5	03/05/18 12:06	03/02/18	
Arsenic	6020A	5.82	mg/Kg	0.39	0.03	5	03/05/18 12:06	03/02/18	
Cadmium	6020A	0.934	mg/Kg	0.016	0.005	5	03/05/18 12:06	03/02/18	
Chromium	6020A	19.0	mg/Kg	0.16	0.05	5	03/05/18 12:06	03/02/18	
Copper	6020A	49.6	mg/Kg	0.39	0.03	5	03/05/18 12:06	03/02/18	
Lead	6020A	18.8	mg/Kg	0.039	0.016	5	03/05/18 12:06	03/02/18	
Mercury	7471B	0.0884	mg/Kg	0.0097	0.0010	1	02/28/18 11:46	02/27/18	
Nickel	6020A	13.2	mg/Kg	0.16	0.02	5	03/05/18 12:06	03/02/18	
Silver	6020A	0.055	mg/Kg	0.016	0.003	5	03/05/18 12:06	03/02/18	
Zinc	6020A	56.9	mg/Kg	0.39	0.16	5	03/05/18 12:06	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: SED-13
Lab Code: K1801446-013

Service Request: K1801446
Date Collected: 02/12/18 14:25
Date Received: 02/14/18 10:30

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	5.34	mg/Kg	0.033	0.013	5	03/05/18 12:09	03/02/18	
Arsenic	6020A	16.4	mg/Kg	0.33	0.03	5	03/05/18 12:09	03/02/18	
Cadmium	6020A	0.365	mg/Kg	0.013	0.005	5	03/05/18 12:09	03/02/18	
Chromium	6020A	32.6	mg/Kg	0.13	0.04	5	03/05/18 12:09	03/02/18	
Copper	6020A	1380	mg/Kg	66	5	1000	03/05/18 12:21	03/02/18	
Lead	6020A	193	mg/Kg	0.033	0.013	5	03/05/18 12:09	03/02/18	
Mercury	7471B	0.847	mg/Kg	0.041	0.004	5	02/28/18 12:10	02/27/18	
Nickel	6020A	19.5	mg/Kg	0.13	0.02	5	03/05/18 12:09	03/02/18	
Silver	6020A	0.104	mg/Kg	0.013	0.003	5	03/05/18 12:09	03/02/18	
Zinc	6020A	928	mg/Kg	66	26	1000	03/05/18 12:21	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1802455-03

Service Request: K1801446
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	ND U	mg/Kg	0.05	0.020	5	03/05/18 11:12	03/02/18	
Arsenic	6020A	ND U	mg/Kg	0.5	0.04	5	03/05/18 11:12	03/02/18	
Cadmium	6020A	ND U	mg/Kg	0.020	0.007	5	03/05/18 11:12	03/02/18	
Chromium	6020A	ND U	mg/Kg	0.20	0.06	5	03/05/18 11:12	03/02/18	
Copper	6020A	ND U	mg/Kg	0.5	0.04	5	03/05/18 11:12	03/02/18	
Lead	6020A	ND U	mg/Kg	0.05	0.020	5	03/05/18 11:12	03/02/18	
Nickel	6020A	ND U	mg/Kg	0.20	0.03	5	03/05/18 11:12	03/02/18	
Silver	6020A	ND U	mg/Kg	0.020	0.004	5	03/05/18 11:12	03/02/18	
Zinc	6020A	0.36 J	mg/Kg	0.5	0.20	5	03/05/18 11:12	03/02/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1802454-03

Service Request: K1801446
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7471B	ND U	mg/Kg	0.02	0.002	1	02/28/18 11:14	02/27/18	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/05/18

Replicate Sample Summary**Total Metals**

Sample Name: SED-6
Lab Code: K1801446-006

Units: mg/Kg
Basis: Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1802455-01 Result			
Antimony	6020A	0.058	0.023	0.071	0.070	0.071	<1	20
Arsenic	6020A	0.58	0.05	7.06	7.24	7.15	3	20
Cadmium	6020A	0.023	0.008	1.87	1.85	1.86	1	20
Chromium	6020A	0.23	0.07	27.9	29.0	28.5	4	20
Copper	6020A	0.58	0.05	41.6	39.0	40.3	6	20
Lead	6020A	0.058	0.023	12.5	12.9	12.7	3	20
Nickel	6020A	0.23	0.03	20.0	20.6	20.3	3	20
Silver	6020A	0.023	0.005	0.099	0.123	0.111	22 #	20
Zinc	6020A	0.58	0.23	78.0	80.5	79.3	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 02/28/18

Replicate Sample Summary

Total Metals

Sample Name: SED-6
Lab Code: K1801446-006

Units: mg/Kg
Basis: Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1802454-01 Result			
Mercury	7471B	0.018	0.002	0.094	0.104	0.099	10	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/5/18
Date Extracted: 03/2/18

Matrix Spike Summary
Total Metals

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 6020A
Prep Method: EPA 3050B

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ1802455-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.071	31.4	92.0	34 N	75-125
Arsenic	7.06	104	92.0	105	75-125
Cadmium	1.87	11.5	9.20	104	75-125
Chromium	27.9	67.2	36.6	107	75-125
Copper	41.6	85.8	46.0	96	75-125
Lead	12.5	128	92.0	126 N	75-125
Nickel	20.0	110	92.0	98	75-125
Silver	0.099	9.06	9.20	98	75-125
Zinc	78.0	172	92.0	102	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 02/28/18
Date Extracted: 02/27/18

Matrix Spike Summary
Total Metals

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 7471B
Prep Method: Method

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ1802454-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	0.094	0.564	0.449	104	80-120

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/05/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ1802455-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Antimony	6020A	82.1	105	78	20-254
Arsenic	6020A	101	98.5	102	69-145
Cadmium	6020A	149	146	102	73-127
Chromium	6020A	175	182	96	71-130
Copper	6020A	99.0	106	93	75-125
Lead	6020A	128	130	99	72-127
Nickel	6020A	143	149	96	73-127
Silver	6020A	39.5	40.9	97	66-134
Zinc	6020A	185	191	97	70-130

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 02/28/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ1802454-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7471B	8.32	7.10	117	51-149

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request:K1801446

Metals

Prep Method: EPA 3050B
Analytical Method: 6020A

Extraction Lot:308964

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
SED-1	K1801446-001	2/12/18	2/14/18	2.024 g	100 mL	
SED-2	K1801446-002	2/12/18	2/14/18	2.223 g	100 mL	
SED-3	K1801446-003	2/12/18	2/14/18	2.138 g	100 mL	
SED-4	K1801446-004	2/12/18	2/14/18	2.077 g	100 mL	
SED-5	K1801446-005	2/12/18	2/14/18	2.245 g	100 mL	
SED-6	K1801446-006	2/12/18	2/14/18	2.299 g	100 mL	
SED-7	K1801446-007	2/12/18	2/14/18	2.849 g	100 mL	
SED-8	K1801446-008	2/12/18	2/14/18	2.487 g	100 mL	
SED-9	K1801446-009	2/12/18	2/14/18	2.529 g	100 mL	
SED-10	K1801446-010	2/12/18	2/14/18	2.817 g	100 mL	
SED-11	K1801446-011	2/12/18	2/14/18	2.518 g	100 mL	
SED-12	K1801446-012	2/12/18	2/14/18	2.011 g	100 mL	
SED-13	K1801446-013	2/12/18	2/14/18	2.004 g	100 mL	
Duplicate	KQ1802455-01DUP	2/12/18	2/14/18	2.309 g	100 mL	
Matrix Spike	KQ1802455-02MS	2/12/18	2/14/18	2.911 g	100 mL	
Method Blank	KQ1802455-03MB	NA	NA	1.00 g	100 mL	
Lab Control Sample	KQ1802455-04LCS	NA	NA	1.0100 g	100 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request:K1801446

Metals

Prep Method: Method
Analytical Method: 7471B

Extraction Lot:308878

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
SED-1	K1801446-001	2/12/18	2/14/18	1.662 g	50 mL	
SED-2	K1801446-002	2/12/18	2/14/18	1.482 g	50 mL	
SED-3	K1801446-003	2/12/18	2/14/18	1.691 g	50 mL	
SED-4	K1801446-004	2/12/18	2/14/18	1.822 g	50 mL	
SED-5	K1801446-005	2/12/18	2/14/18	1.623 g	50 mL	
SED-6	K1801446-006	2/12/18	2/14/18	1.415 g	50 mL	
SED-7	K1801446-007	2/12/18	2/14/18	2.205 g	50 mL	
SED-8	K1801446-008	2/12/18	2/14/18	1.633 g	50 mL	
SED-9	K1801446-009	2/12/18	2/14/18	2.604 g	50 mL	
SED-10	K1801446-010	2/12/18	2/14/18	1.541 g	50 mL	
SED-11	K1801446-011	2/12/18	2/14/18	3.978 g	50 mL	
SED-12	K1801446-012	2/12/18	2/14/18	1.607 g	50 mL	
SED-13	K1801446-013	2/12/18	2/14/18	1.613 g	50 mL	
Duplicate	KQ1802454-01DUP	2/12/18	2/14/18	1.482 g	50 mL	
Matrix Spike	KQ1802454-02MS	2/12/18	2/14/18	1.485 g	50 mL	
Method Blank	KQ1802454-03MB	NA	NA	0.5000 g	50 mL	
Lab Control Sample	KQ1802454-04LCS	NA	NA	0.2620 g	50 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/28/18 11:11	Mercury	7471B	582038	5.01	5.00	100	90-110
CCV 02/28/18 11:30	Mercury	7471B	582038	5.10	5.00	102	90-110
CCV 02/28/18 11:54	Mercury	7471B	582038	5.18	5.00	104	90-110
CCV 02/28/18 12:12	Mercury	7471B	582038	5.27	5.00	105	90-110
ICV 02/28/18 11:06	Mercury	7471B	582038	5.24	5.00	105	90-110
CCV 03/05/18 09:03	Antimony	6020A	582353	12.8	12.5	102	90-110
	Arsenic	6020A	582353	25.2	25.0	101	90-110
	Cadmium	6020A	582353	25.2	25.0	101	90-110
	Chromium	6020A	582353	25.0	25.0	100	90-110
	Copper	6020A	582353	25.1	25.0	100	90-110
	Lead	6020A	582353	25.0	25.0	100	90-110
	Nickel	6020A	582353	25.4	25.0	102	90-110
	Silver	6020A	582353	12.5	12.5	100	90-110
	Zinc	6020A	582353	25.0	25.0	100	90-110
CCV 03/05/18 09:51	Antimony	6020A	582353	12.7	12.5	101	90-110
	Arsenic	6020A	582353	25.7	25.0	103	90-110
	Cadmium	6020A	582353	25.6	25.0	103	90-110
	Chromium	6020A	582353	25.5	25.0	102	90-110
	Copper	6020A	582353	25.8	25.0	103	90-110
	Lead	6020A	582353	25.0	25.0	100	90-110
	Nickel	6020A	582353	25.5	25.0	102	90-110
	Silver	6020A	582353	12.8	12.5	102	90-110
	Zinc	6020A	582353	25.6	25.0	103	90-110
CCV 03/05/18 10:23	Antimony	6020A	582353	12.9	12.5	103	90-110
	Arsenic	6020A	582353	25.7	25.0	103	90-110
	Cadmium	6020A	582353	24.8	25.0	99	90-110
	Chromium	6020A	582353	24.8	25.0	99	90-110
	Copper	6020A	582353	24.5	25.0	98	90-110
	Lead	6020A	582353	24.1	25.0	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 03/05/18 10:23	Nickel	6020A	582353	24.2	25.0	97	90-110
	Silver	6020A	582353	12.1	12.5	97	90-110
	Zinc	6020A	582353	25.3	25.0	101	90-110
CCV 03/05/18 10:58	Antimony	6020A	582353	12.7	12.5	101	90-110
	Arsenic	6020A	582353	24.7	25.0	99	90-110
	Cadmium	6020A	582353	24.1	25.0	97	90-110
	Chromium	6020A	582353	23.6	25.0	95	90-110
	Copper	6020A	582353	23.1	25.0	92	90-110
	Lead	6020A	582353	23.9	25.0	95	90-110
	Nickel	6020A	582353	23.2	25.0	93	90-110
	Silver	6020A	582353	11.5	12.5	92	90-110
	Zinc	6020A	582353	23.8	25.0	95	90-110
CCV 03/05/18 11:40	Antimony	6020A	582353	13.0	12.5	104	90-110
	Arsenic	6020A	582353	25.3	25.0	101	90-110
	Cadmium	6020A	582353	25.2	25.0	101	90-110
	Chromium	6020A	582353	24.5	25.0	98	90-110
	Copper	6020A	582353	24.1	25.0	96	90-110
	Lead	6020A	582353	25.0	25.0	100	90-110
	Nickel	6020A	582353	24.3	25.0	97	90-110
	Silver	6020A	582353	12.2	12.5	97	90-110
	Zinc	6020A	582353	25.3	25.0	101	90-110
CCV 03/05/18 12:15	Antimony	6020A	582353	12.9	12.5	103	90-110
	Arsenic	6020A	582353	25.3	25.0	101	90-110
	Cadmium	6020A	582353	25.0	25.0	100	90-110
	Chromium	6020A	582353	24.4	25.0	98	90-110
	Copper	6020A	582353	24.7	25.0	99	90-110
	Lead	6020A	582353	24.4	25.0	98	90-110
	Nickel	6020A	582353	24.3	25.0	97	90-110
	Silver	6020A	582353	12.4	12.5	99	90-110
	Zinc	6020A	582353	24.9	25.0	100	90-110
CCV 03/05/18 12:23	Antimony	6020A	582353	12.8	12.5	102	90-110
	Arsenic	6020A	582353	25.1	25.0	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 03/05/18 12:23	Cadmium	6020A	582353	25.1	25.0	101	90-110
	Chromium	6020A	582353	24.3	25.0	97	90-110
	Copper	6020A	582353	24.9	25.0	100	90-110
	Lead	6020A	582353	24.8	25.0	99	90-110
	Nickel	6020A	582353	24.5	25.0	98	90-110
	Silver	6020A	582353	12.4	12.5	99	90-110
	Zinc	6020A	582353	24.8	25.0	99	90-110
ICV 03/05/18 09:00	Antimony	6020A	582353	12.8	12.5	102	90-110
	Arsenic	6020A	582353	24.9	25.0	100	90-110
	Cadmium	6020A	582353	12.7	12.5	102	90-110
	Chromium	6020A	582353	10.1	10.0	101	90-110
	Copper	6020A	582353	12.4	12.5	99	90-110
	Lead	6020A	582353	25.3	25.0	101	90-110
	Nickel	6020A	582353	25.4	25.0	102	90-110
	Silver	6020A	582353	12.4	12.5	99	90-110
	Zinc	6020A	582353	25.9	25.0	104	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/28/18 11:12	Mercury	7471B	582038	-0.0310	J
CCB 02/28/18 11:32	Mercury	7471B	582038	0.02	U
CCB 02/28/18 11:55	Mercury	7471B	582038	0.02	U
CCB 02/28/18 12:14	Mercury	7471B	582038	0.02	U
ICB 02/28/18 11:07	Mercury	7471B	582038	-0.0630	J
CCB 03/05/18 09:09	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.08	U
	Lead	6020A	582353	0.04	U
	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 09:54	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.08	U
	Lead	6020A	582353	0.04	U
	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 10:26	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.08	U
	Lead	6020A	582353	0.04	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 03/05/18 10:26	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 11:01	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.09	J
	Lead	6020A	582353	0.04	U
	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 11:43	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.08	U
	Lead	6020A	582353	0.04	U
	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 12:18	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U
	Cadmium	6020A	582353	0.014	U
	Chromium	6020A	582353	0.12	U
	Copper	6020A	582353	0.3	J
	Lead	6020A	582353	0.04	U
	Nickel	6020A	582353	0.06	U
	Silver	6020A	582353	0.008	U
	Zinc	6020A	582353	0.4	U
CCB 03/05/18 12:26	Antimony	6020A	582353	0.04	U
	Arsenic	6020A	582353	0.08	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
CCB 03/05/18 12:26				
Cadmium	6020A	582353	0.014	U
Chromium	6020A	582353	0.12	U
Copper	6020A	582353	0.2	J
Lead	6020A	582353	0.04	U
Nickel	6020A	582353	0.06	U
Silver	6020A	582353	0.008	U
Zinc	6020A	582353	0.4	U
ICB 03/05/18 09:06				
Antimony	6020A	582353	0.04	U
Arsenic	6020A	582353	0.08	U
Cadmium	6020A	582353	0.014	U
Chromium	6020A	582353	0.12	U
Copper	6020A	582353	0.08	U
Lead	6020A	582353	0.04	U
Nickel	6020A	582353	0.06	U
Silver	6020A	582353	0.008	U
Zinc	6020A	582353	0.4	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV	Mercury	7471B	582038	0.15	0.2	73	50-150	02/28/18 11:09
LLCCVS	Antimony	6020A	582353	0.10	0.1	102	70-130	03/05/18 11:06
	Arsenic	6020A	582353	0.97	1.0	97	70-130	03/05/18 11:06
	Cadmium	6020A	582353	0.039	0.04	97	70-130	03/05/18 11:06
	Chromium	6020A	582353	0.36	0.4	89	70-130	03/05/18 11:06
	Copper	6020A	582353	0.24	0.2	122	70-130	03/05/18 11:06
	Lead	6020A	582353	0.088	0.1	88	70-130	03/05/18 11:06
	Nickel	6020A	582353	0.43	0.4	106	70-130	03/05/18 11:06
	Silver	6020A	582353	0.038	0.04	96	70-130	03/05/18 11:06
	Zinc	6020A	582353	1.1	1.0	109	70-130	03/05/18 11:06
LLCCVS	Antimony	6020A	582353	0.094	0.1	94	70-130	03/05/18 12:32
	Arsenic	6020A	582353	1.0	1.0	100	70-130	03/05/18 12:32
	Cadmium	6020A	582353	0.039	0.04	98	70-130	03/05/18 12:32
	Chromium	6020A	582353	0.40	0.4	99	70-130	03/05/18 12:32
	Lead	6020A	582353	0.095	0.1	95	70-130	03/05/18 12:32
	Nickel	6020A	582353	0.45	0.4	112	70-130	03/05/18 12:32
	Silver	6020A	582353	0.037	0.04	93	70-130	03/05/18 12:32
	Zinc	6020A	582353	1.3	1.0	126	70-130	03/05/18 12:32
LLCCVS	Copper	6020A	582353	1.1	1.0	112	70-130	03/05/18 12:35
LLICVS	Antimony	6020A	582353	0.099	0.1	99	70-130	03/05/18 09:17
	Arsenic	6020A	582353	0.98	1.0	98	70-130	03/05/18 09:17
	Cadmium	6020A	582353	0.036	0.04	89	70-130	03/05/18 09:17
	Chromium	6020A	582353	0.41	0.4	102	70-130	03/05/18 09:17
	Copper	6020A	582353	0.24	0.2	121	70-130	03/05/18 09:17
	Lead	6020A	582353	0.10	0.1	101	70-130	03/05/18 09:17
	Nickel	6020A	582353	0.41	0.4	103	70-130	03/05/18 09:17
	Silver	6020A	582353	0.045	0.04	113	70-130	03/05/18 09:17
	Zinc	6020A	582353	0.95	1.0	95	70-130	03/05/18 09:17

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Antimony	6020A	582353	0.04	-	-	-	03/05/18 09:19
Arsenic	6020A	582353	0.08	-	-	-	03/05/18 09:19
Cadmium	6020A	582353	0.017	-	-	-	03/05/18 09:19
Chromium	6020A	582353	0.56	-	-	-	03/05/18 09:19
Copper	6020A	582353	0.61	-	-	-	03/05/18 09:19
Lead	6020A	582353	0.07	-	-	-	03/05/18 09:19
Nickel	6020A	582353	0.53	-	-	-	03/05/18 09:19
Silver	6020A	582353	0.008	-	-	-	03/05/18 09:19
Zinc	6020A	582353	0.5	-	-	-	03/05/18 09:19

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Antimony	6020A	582353	0.04	-	-	-	03/05/18 09:22
Arsenic	6020A	582353	24.3	25.0	97	80-120	03/05/18 09:22
Cadmium	6020A	582353	24.5	25.0	98	80-120	03/05/18 09:22
Chromium	6020A	582353	47.5	50.0	95	80-120	03/05/18 09:22
Copper	6020A	582353	45.3	50.0	91	80-120	03/05/18 09:22
Lead	6020A	582353	0.07	-	-	-	03/05/18 09:22
Nickel	6020A	582353	46.1	50.0	92	80-120	03/05/18 09:22
Silver	6020A	582353	11.7	12.5	94	80-120	03/05/18 09:22
Zinc	6020A	582353	24.0	25.0	96	80-120	03/05/18 09:22

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1801446-006A	Mercury	7471B	582038	1.00	6.29	5.00	106	80-120	02/28/18 11:27
K1801446-006A	Antimony	6020A	582353	0.12	53.7	50.0	107	80-120	03/05/18 11:26
	Arsenic	6020A	582353	12.1	62.2	50.0	100	80-120	03/05/18 11:26
	Cadmium	6020A	582353	3.22	52.3	50.0	98	80-120	03/05/18 11:26
	Chromium	6020A	582353	48.0	96.6	50.0	97	80-120	03/05/18 11:26
	Copper	6020A	582353	71.5	118	50.0	93	80-120	03/05/18 11:26
	Lead	6020A	582353	21.5	68.6	50.0	94	80-120	03/05/18 11:26
	Nickel	6020A	582353	34.4	82.5	50.0	96	80-120	03/05/18 11:26
	Silver	6020A	582353	0.17	8.97	10.0	88	80-120	03/05/18 11:26
	Zinc	6020A	582353	134	181	50.0	93	80-120	03/05/18 11:26

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1801446-001SDL	Mercury	7471B	582038	1.1	1.0	1	10	02/28/18 12:05
K1801446-006SDL	Antimony	6020A	582353	0.6	0.1 U	82	10	03/05/18 11:23
	Arsenic	6020A	582353	61	59	3	10	03/05/18 11:23
	Cadmium	6020A	582353	16.1	16.3	1	10	03/05/18 11:23
	Chromium	6020A	582353	240	240	0	10	03/05/18 11:23
	Copper	6020A	582353	357	362	1	10	03/05/18 11:23
	Lead	6020A	582353	108	113	5	10	03/05/18 11:23
	Nickel	6020A	582353	172	175	2	10	03/05/18 11:23
	Silver	6020A	582353	0.9	0.9 J	7	10	03/05/18 11:23
	Zinc	6020A	582353	670	667	1	10	03/05/18 11:23

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Detection Limits

Matrix: Sediment

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Mercury	253	ug/L	0.2	0.02	7471B

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Detection Limits

Matrix: Sediment

Analyte	Mass	Units	MRL	MDL	Method
Antimony	121	ug/L	0.1	0.04	6020A
Arsenic	75	ug/L	1	0.08	6020A
Cadmium	111	ug/L	0.04	0.014	6020A
Chromium	52	ug/L	0.4	0.12	6020A
Copper	65	ug/L	1.0	0.08	6020A
Lead	208	ug/L	0.1	0.04	6020A
Nickel	60	ug/L	0.4	0.06	6020A
Silver	107	ug/L	0.04	0.008	6020A
Zinc	66	ug/L	1	0.4	6020A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

ICP Linear Range (Quarterly)

Instrument: K-CVAA-02

Analyte	Concentration (ug/L)	Method
Mercury	10	7471B

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Antimony 121	3000	6020A
Arsenic 75	3000	6020A
Cadmium 111	3000	6020A
Chromium 52	3000	6020A
Copper 65	3000	6020A
Lead 208	3000	6020A
Nickel 60	3000	6020A
Silver 107	225	6020A
Zinc 66	3000	6020A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 582038

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	02/28/18 10:56	
ZZZZZZ	1	02/28/18 10:58	
ZZZZZZ	1	02/28/18 10:59	
ZZZZZZ	1	02/28/18 11:01	
ZZZZZZ	1	02/28/18 11:02	
ZZZZZZ	1	02/28/18 11:04	
ICV1	1	02/28/18 11:06	X
ICB1	1	02/28/18 11:07	X
LLICV1	1	02/28/18 11:09	X
CCV1	1	02/28/18 11:11	X
CCB1	1	02/28/18 11:12	X
KQ1802454-03MB	1	02/28/18 11:14	X
KQ1802454-04LCS1	10	02/28/18 11:15	X
ZZZZZZ	1	02/28/18 11:17	
K1801446-002	1	02/28/18 11:19	X
K1801446-003	1	02/28/18 11:20	X
K1801446-004	1	02/28/18 11:22	X
K1801446-005	1	02/28/18 11:23	X
K1801446-006	1	02/28/18 11:25	X
K1801446-006PS	1	02/28/18 11:27	X
K1801446-006DUP	1	02/28/18 11:28	X
CCV2	1	02/28/18 11:30	X
CCB2	1	02/28/18 11:32	X
K1801446-006MS	1	02/28/18 11:33	X
K1801446-007	1	02/28/18 11:35	X
K1801446-008	1	02/28/18 11:36	X
K1801446-009	1	02/28/18 11:38	X
ZZZZZZ	1	02/28/18 11:40	
ZZZZZZ	1	02/28/18 11:43	
K1801446-012	1	02/28/18 11:46	X
ZZZZZZ	1	02/28/18 11:47	
ZZZZZZ	1	02/28/18 11:50	
ZZZZZZ	1	02/28/18 11:52	
CCV3	1	02/28/18 11:54	X
CCB3	1	02/28/18 11:55	X
K1801446-001SDL	5	02/28/18 11:58	X
K1801446-001	1	02/28/18 12:04	X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 582038

Sample	Dilution Factor	Date/Time	H g
K1801446-001SDL	5	02/28/18 12:05	X
K1801446-010	10	02/28/18 12:07	X
K1801446-011	5	02/28/18 12:08	X
K1801446-013	5	02/28/18 12:10	X
CCV4	1	02/28/18 12:12	X
CCB4	1	02/28/18 12:14	X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Dilution Factor	Date/Time	S	A	C	C	C	P	N	A	Z
			b	s	d	r	u	b	i	g	n
ZZZZZZ	1	03/05/18 08:54									
ZZZZZZ	1	03/05/18 08:57									
ICV	1	03/05/18 09:00	X	X	X	X	X	X	X	X	X
CCV	1	03/05/18 09:03	X	X	X	X	X	X	X	X	X
ICB	1	03/05/18 09:06	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 09:09	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/05/18 09:12									
LLICVS	1	03/05/18 09:17	X	X	X	X	X	X	X	X	X
ICSA	1	03/05/18 09:19	X	X	X	X	X	X	X	X	X
ICSAB	1	03/05/18 09:22	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	03/05/18 09:25									
ZZZZZZ	20	03/05/18 09:28									
ZZZZZZ	20	03/05/18 09:31									
ZZZZZZ	5	03/05/18 09:34									
ZZZZZZ	5	03/05/18 09:37									
ZZZZZZ	25	03/05/18 09:40									
ZZZZZZ	5	03/05/18 09:43									
ZZZZZZ	5	03/05/18 09:45									
ZZZZZZ	5	03/05/18 09:48									
CCV	1	03/05/18 09:51	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 09:54	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	03/05/18 09:57									
ZZZZZZ	5	03/05/18 10:00									
ZZZZZZ	5	03/05/18 10:03									
ZZZZZZ	5	03/05/18 10:06									
ZZZZZZ	5	03/05/18 10:09									
ZZZZZZ	5	03/05/18 10:11									
ZZZZZZ	5	03/05/18 10:14									
ZZZZZZ	5	03/05/18 10:17									
ZZZZZZ	5	03/05/18 10:20									
CCV	1	03/05/18 10:23	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 10:26	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	03/05/18 10:29									
ZZZZZZ	5	03/05/18 10:32									
ZZZZZZ	5	03/05/18 10:35									
ZZZZZZ	5	03/05/18 10:37									
ZZZZZZ	5	03/05/18 10:40									

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Dilution Factor	Date/Time	S	A	C	C	C	P	N	A	Z
			b	s	d	r	u	b	i	g	n
ZZZZZZ	5	03/05/18 10:43									
ZZZZZZ	5	03/05/18 10:46									
ZZZZZZ	5	03/05/18 10:49									
ZZZZZZ	5	03/05/18 10:52									
ZZZZZZ	5	03/05/18 10:55									
CCV	1	03/05/18 10:58	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 11:01	X	X	X	X	X	X	X	X	X
LLCCVS	1	03/05/18 11:06	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/05/18 11:09									
KQ1802455-03MB	5	03/05/18 11:12	X	X	X	X	X	X	X	X	X
KQ1802455-04LCS1	20	03/05/18 11:15	X	X	X	X	X	X	X	X	X
K1801446-006	5	03/05/18 11:17	X	X	X	X	X	X	X	X	X
K1801446-006DUP	5	03/05/18 11:20	X	X	X	X	X	X	X	X	X
K1801446-006SDL	25	03/05/18 11:23	X	X	X	X	X	X	X	X	X
K1801446-006PS	5	03/05/18 11:26	X	X	X	X	X	X	X	X	X
K1801446-006MS	5	03/05/18 11:29	X	X	X	X	X	X	X	X	X
K1801446-001	5	03/05/18 11:32	X	X	X	X	X	X	X	X	X
K1801446-002	5	03/05/18 11:35	X	X	X	X	X	X	X	X	X
K1801446-003	5	03/05/18 11:37	X	X	X	X	X	X	X	X	X
CCV	1	03/05/18 11:40	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 11:43	X	X	X	X	X	X	X	X	X
K1801446-004	5	03/05/18 11:46	X	X	X	X	X	X	X	X	X
K1801446-005	5	03/05/18 11:49	X	X	X	X	X	X	X	X	X
K1801446-007	5	03/05/18 11:52	X	X	X	X	X	X	X	X	X
K1801446-008	5	03/05/18 11:55	X	X	X	X	X	X	X	X	X
K1801446-009	5	03/05/18 11:57	X	X	X	X	X	X	X	X	X
K1801446-010	5	03/05/18 12:00	X	X	X	X		X	X	X	
K1801446-011	5	03/05/18 12:03	X	X	X	X	X	X	X	X	X
K1801446-012	5	03/05/18 12:06	X	X	X	X	X	X	X	X	X
K1801446-013	5	03/05/18 12:09	X	X	X	X		X	X	X	
K1801446-010	1000	03/05/18 12:12					X				X
CCV	1	03/05/18 12:15	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 12:18	X	X	X	X	X	X	X	X	X
K1801446-013	1000	03/05/18 12:21					X				X
CCV	1	03/05/18 12:23	X	X	X	X	X	X	X	X	X
CCB	1	03/05/18 12:26	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/05/18 12:29									

ALS Group USA, Corp.
 dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Dilution Factor	Date/Time	S	A	C	C	C	P	N	A	Z
			b	s	d	r	u	b	i	g	n
LLCCVS	1	03/05/18 12:32	X	X	X	X		X	X	X	X
LLCCVS 1.0 ppb	1	03/05/18 12:35					X				

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Date/Time	Sc45NG	Ge72He	Ge72H2	In115He	Lu175He	Th232He
ZZZZZZ	03/05/18 08:54						
ZZZZZZ	03/05/18 08:57						
ICV	03/05/18 09:00	98	98	98	98	96	100
CCV	03/05/18 09:03	98	97	99	97	98	101
ICB	03/05/18 09:06	98	98	99	98	98	99
CCB	03/05/18 09:09	98	97	99	99	98	101
ZZZZZZ	03/05/18 09:12						
LLICVS	03/05/18 09:17	98	97	98	97	98	99
ICSA	03/05/18 09:19	84	85	87	84	91	94
ICSAB	03/05/18 09:22	90	89	91	87	93	96
ZZZZZZ	03/05/18 09:25						
ZZZZZZ	03/05/18 09:28						
ZZZZZZ	03/05/18 09:31						
ZZZZZZ	03/05/18 09:34						
ZZZZZZ	03/05/18 09:37						
ZZZZZZ	03/05/18 09:40						
ZZZZZZ	03/05/18 09:43						
ZZZZZZ	03/05/18 09:45						
ZZZZZZ	03/05/18 09:48						
CCV	03/05/18 09:51	99	95	98	96	97	100
CCB	03/05/18 09:54	99	97	99	97	98	102
ZZZZZZ	03/05/18 09:57						
ZZZZZZ	03/05/18 10:00						
ZZZZZZ	03/05/18 10:03						
ZZZZZZ	03/05/18 10:06						
ZZZZZZ	03/05/18 10:09						
ZZZZZZ	03/05/18 10:11						
ZZZZZZ	03/05/18 10:14						
ZZZZZZ	03/05/18 10:17						
ZZZZZZ	03/05/18 10:20						
CCV	03/05/18 10:23	90	99	94	100	100	100
CCB	03/05/18 10:26	91	99	94	100	100	99
ZZZZZZ	03/05/18 10:29						
ZZZZZZ	03/05/18 10:32						
ZZZZZZ	03/05/18 10:35						
ZZZZZZ	03/05/18 10:37						
ZZZZZZ	03/05/18 10:40						

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Date/Time	Sc45NG	Ge72He	Ge72H2	In115He	Lu175He	Th232He
ZZZZZ	03/05/18 10:43						
ZZZZZ	03/05/18 10:46						
ZZZZZ	03/05/18 10:49						
ZZZZZ	03/05/18 10:52						
ZZZZZ	03/05/18 10:55						
CCV	03/05/18 10:58	79	95	84	97	95	92
CCB	03/05/18 11:01	78	94	83	96	96	93
LLCCVS	03/05/18 11:06	79	92	82	95	94	93
ZZZZZ	03/05/18 11:09						
KQ1802455-03MB	03/05/18 11:12	80	91	82	95	93	92
KQ1802455-04LCS1	03/05/18 11:15	74	84	75	86	89	93
K1801446-006	03/05/18 11:17	72	81	73	85	90	91
K1801446-006DUP	03/05/18 11:20	74	85	75	88	92	93
K1801446-006SDL	03/05/18 11:23	75	86	79	89	91	93
K1801446-006PS	03/05/18 11:26	76	85	79	88	93	94
K1801446-006MS	03/05/18 11:29	79	85	79	87	93	96
K1801446-001	03/05/18 11:32	84	88	82	89	95	96
K1801446-002	03/05/18 11:35	84	90	85	89	93	97
K1801446-003	03/05/18 11:37	86	90	86	92	96	98
CCV	03/05/18 11:40	79	85	85	89	91	95
CCB	03/05/18 11:43	84	90	87	93	94	97
K1801446-004	03/05/18 11:46	88	88	84	87	93	97
K1801446-005	03/05/18 11:49	89	90	87	90	95	98
K1801446-007	03/05/18 11:52	91	91	86	90	96	100
K1801446-008	03/05/18 11:55	91	91	88	90	94	100
K1801446-009	03/05/18 11:57	89	90	87	90	95	100
K1801446-010	03/05/18 12:00	90	89	87	90	94	99
K1801446-011	03/05/18 12:03	93	92	88	93	97	101
K1801446-012	03/05/18 12:06	90	90	88	91	96	100
K1801446-013	03/05/18 12:09	94	91	89	92	97	100
K1801446-010	03/05/18 12:12	88	90	89	91	94	98
CCV	03/05/18 12:15	88	92	90	93	95	98
CCB	03/05/18 12:18	91	91	91	95	96	98
K1801446-013	03/05/18 12:21	90	91	91	94	94	99
CCV	03/05/18 12:23	91	92	90	93	94	100
CCB	03/05/18 12:26	90	91	90	94	94	98
ZZZZZ	03/05/18 12:29						

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment/

Service Request: K1801446

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 582353

Sample	Date/Time	Sc45NG	Ge72He	Ge72H2	In115He	Lu175He	Th232He
LLCCVS	03/05/18 12:32	90	88	89	92	94	98
LLCCVS 1.0 ppb	03/05/18 12:35	89	89	89	91	93	97

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:10
Date Received: 02/14/18 10:30

Sample Name: SED-1
Lab Code: K1801446-001

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	110	28	10	03/08/18 04:42	2/26/18	
1,2-Dichlorobenzene	ND U	110	26	10	03/08/18 04:42	2/26/18	
1,4-Dichlorobenzene	ND U	110	27	10	03/08/18 04:42	2/26/18	
2,4-Dimethylphenol	ND U	530	67	10	03/08/18 04:42	2/26/18	
2-Methylnaphthalene	ND U	110	30	10	03/08/18 04:42	2/26/18	
2-Methylphenol	ND U	110	44	10	03/08/18 04:42	2/26/18	
4-Methylphenol	ND U	110	48	10	03/08/18 04:42	2/26/18	
Acenaphthene	ND U	110	34	10	03/08/18 04:42	2/26/18	
Acenaphthylene	ND U	110	28	10	03/08/18 04:42	2/26/18	
Anthracene	38 J	110	34	10	03/08/18 04:42	2/26/18	
Benz(a)anthracene	100 J	110	38	10	03/08/18 04:42	2/26/18	
Benzo(a)pyrene	94 J	110	38	10	03/08/18 04:42	2/26/18	
Benzo(b)fluoranthene	210	110	36	10	03/08/18 04:42	2/26/18	
Benzo(g,h,i)perylene	ND U	110	39	10	03/08/18 04:42	2/26/18	*
Benzo(k)fluoranthene	77 J	110	43	10	03/08/18 04:42	2/26/18	
Benzoic Acid	ND U	4200	1100	10	03/08/18 04:42	2/26/18	
Benzyl Alcohol	ND U	210	52	10	03/08/18 04:42	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	1100	94	10	03/08/18 04:42	2/26/18	
Butyl Benzyl Phthalate	ND U	110	39	10	03/08/18 04:42	2/26/18	
Chrysene	510	110	44	10	03/08/18 04:42	2/26/18	
Dibenz(a,h)anthracene	ND U	110	32	10	03/08/18 04:42	2/26/18	
Dibenzofuran	ND U	110	36	10	03/08/18 04:42	2/26/18	
Diethyl Phthalate	ND U	110	39	10	03/08/18 04:42	2/26/18	
Dimethyl Phthalate	ND U	110	43	10	03/08/18 04:42	2/26/18	
Di-n-butyl Phthalate	ND U	210	51	10	03/08/18 04:42	2/26/18	
Di-n-octyl Phthalate	ND U	110	34	10	03/08/18 04:42	2/26/18	
Fluoranthene	660	110	39	10	03/08/18 04:42	2/26/18	
Fluorene	ND U	110	35	10	03/08/18 04:42	2/26/18	
Hexachlorobenzene	ND U	110	35	10	03/08/18 04:42	2/26/18	
Hexachlorobutadiene	ND U	110	32	10	03/08/18 04:42	2/26/18	
Hexachloroethane	ND U	110	27	10	03/08/18 04:42	2/26/18	
Indeno(1,2,3-cd)pyrene	59 J	110	34	10	03/08/18 04:42	2/26/18	
Naphthalene	ND U	110	31	10	03/08/18 04:42	2/26/18	
N-Nitrosodiphenylamine	ND U	110	34	10	03/08/18 04:42	2/26/18	
Pentachlorophenol (PCP)	ND U	1100	56	10	03/08/18 04:42	2/26/18	
Phenanthrene	230	110	38	10	03/08/18 04:42	2/26/18	
Phenol	ND U	320	33	10	03/08/18 04:42	2/26/18	
Pyrene	400	110	39	10	03/08/18 04:42	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:10
Date Received: 02/14/18 10:30

Sample Name: SED-1
Lab Code: K1801446-001

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	63	10 - 124	03/08/18 04:42	
2-Fluorobiphenyl	53	35 - 105	03/08/18 04:42	
Nitrobenzene-d5	61	10 - 84	03/08/18 04:42	
Phenol-d6	54	39 - 109	03/08/18 04:42	
p-Terphenyl-d14	79	30 - 102	03/08/18 04:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 11:50
Date Received: 02/14/18 10:30

Sample Name: SED-2
Lab Code: K1801446-002

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	88	26	10	03/08/18 05:10	2/26/18	
1,2-Dichlorobenzene	ND U	88	24	10	03/08/18 05:10	2/26/18	
1,4-Dichlorobenzene	ND U	88	25	10	03/08/18 05:10	2/26/18	
2,4-Dimethylphenol	ND U	440	63	10	03/08/18 05:10	2/26/18	
2-Methylnaphthalene	33 J	88	28	10	03/08/18 05:10	2/26/18	
2-Methylphenol	ND U	88	41	10	03/08/18 05:10	2/26/18	
4-Methylphenol	ND U	88	45	10	03/08/18 05:10	2/26/18	
Acenaphthene	47 J	88	32	10	03/08/18 05:10	2/26/18	
Acenaphthylene	ND U	88	26	10	03/08/18 05:10	2/26/18	
Anthracene	39 J	88	32	10	03/08/18 05:10	2/26/18	
Benz(a)anthracene	43 J	88	36	10	03/08/18 05:10	2/26/18	
Benzo(a)pyrene	ND U	88	36	10	03/08/18 05:10	2/26/18	
Benzo(b)fluoranthene	64 J	88	34	10	03/08/18 05:10	2/26/18	
Benzo(g,h,i)perylene	ND U	88	37	10	03/08/18 05:10	2/26/18	*
Benzo(k)fluoranthene	ND U	88	40	10	03/08/18 05:10	2/26/18	
Benzoic Acid	ND U	3500	960	10	03/08/18 05:10	2/26/18	
Benzyl Alcohol	ND U	180	49	10	03/08/18 05:10	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	880	89	10	03/08/18 05:10	2/26/18	
Butyl Benzyl Phthalate	ND U	88	37	10	03/08/18 05:10	2/26/18	
Chrysene	100	88	41	10	03/08/18 05:10	2/26/18	
Dibenz(a,h)anthracene	ND U	88	30	10	03/08/18 05:10	2/26/18	
Dibenzofuran	60 J	88	34	10	03/08/18 05:10	2/26/18	
Diethyl Phthalate	ND U	88	37	10	03/08/18 05:10	2/26/18	
Dimethyl Phthalate	ND U	88	40	10	03/08/18 05:10	2/26/18	
Di-n-butyl Phthalate	ND U	180	48	10	03/08/18 05:10	2/26/18	
Di-n-octyl Phthalate	ND U	88	32	10	03/08/18 05:10	2/26/18	
Fluoranthene	450	88	37	10	03/08/18 05:10	2/26/18	
Fluorene	49 J	88	33	10	03/08/18 05:10	2/26/18	
Hexachlorobenzene	ND U	88	33	10	03/08/18 05:10	2/26/18	
Hexachlorobutadiene	ND U	88	30	10	03/08/18 05:10	2/26/18	
Hexachloroethane	ND U	88	25	10	03/08/18 05:10	2/26/18	
Indeno(1,2,3-cd)pyrene	ND U	88	32	10	03/08/18 05:10	2/26/18	
Naphthalene	38 J	88	29	10	03/08/18 05:10	2/26/18	
N-Nitrosodiphenylamine	ND U	88	32	10	03/08/18 05:10	2/26/18	
Pentachlorophenol (PCP)	ND U	880	53	10	03/08/18 05:10	2/26/18	
Phenanthrene	480	88	36	10	03/08/18 05:10	2/26/18	
Phenol	ND U	270	31	10	03/08/18 05:10	2/26/18	
Pyrene	260	88	37	10	03/08/18 05:10	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 11:50
Date Received: 02/14/18 10:30

Sample Name: SED-2
Lab Code: K1801446-002

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	50	10 - 124	03/08/18 05:10	
2-Fluorobiphenyl	42	35 - 105	03/08/18 05:10	
Nitrobenzene-d5	49	10 - 84	03/08/18 05:10	
Phenol-d6	40	39 - 109	03/08/18 05:10	
p-Terphenyl-d14	66	30 - 102	03/08/18 05:10	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:45
Date Received: 02/14/18 10:30

Sample Name: SED-3
Lab Code: K1801446-003

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	120	31	10	03/08/18 05:39	2/26/18	
1,2-Dichlorobenzene	ND U	120	29	10	03/08/18 05:39	2/26/18	
1,4-Dichlorobenzene	ND U	120	30	10	03/08/18 05:39	2/26/18	
2,4-Dimethylphenol	ND U	590	75	10	03/08/18 05:39	2/26/18	
2-Methylnaphthalene	ND U	120	34	10	03/08/18 05:39	2/26/18	
2-Methylphenol	ND U	120	49	10	03/08/18 05:39	2/26/18	
4-Methylphenol	ND U	120	54	10	03/08/18 05:39	2/26/18	
Acenaphthene	ND U	120	38	10	03/08/18 05:39	2/26/18	
Acenaphthylene	ND U	120	31	10	03/08/18 05:39	2/26/18	
Anthracene	55 J	120	38	10	03/08/18 05:39	2/26/18	
Benz(a)anthracene	130	120	43	10	03/08/18 05:39	2/26/18	
Benzo(a)pyrene	120	120	43	10	03/08/18 05:39	2/26/18	
Benzo(b)fluoranthene	240	120	41	10	03/08/18 05:39	2/26/18	
Benzo(g,h,i)perylene	ND U	120	44	10	03/08/18 05:39	2/26/18	*
Benzo(k)fluoranthene	88 J	120	48	10	03/08/18 05:39	2/26/18	
Benzoic Acid	ND U	4700	1200	10	03/08/18 05:39	2/26/18	
Benzyl Alcohol	ND U	240	58	10	03/08/18 05:39	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	1200	110	10	03/08/18 05:39	2/26/18	
Butyl Benzyl Phthalate	ND U	120	44	10	03/08/18 05:39	2/26/18	
Chrysene	280	120	49	10	03/08/18 05:39	2/26/18	
Dibenz(a,h)anthracene	ND U	120	36	10	03/08/18 05:39	2/26/18	
Dibenzofuran	ND U	120	41	10	03/08/18 05:39	2/26/18	
Diethyl Phthalate	ND U	120	44	10	03/08/18 05:39	2/26/18	
Dimethyl Phthalate	ND U	120	48	10	03/08/18 05:39	2/26/18	
Di-n-butyl Phthalate	ND U	240	57	10	03/08/18 05:39	2/26/18	
Di-n-octyl Phthalate	ND U	120	38	10	03/08/18 05:39	2/26/18	
Fluoranthene	510	120	44	10	03/08/18 05:39	2/26/18	
Fluorene	ND U	120	39	10	03/08/18 05:39	2/26/18	
Hexachlorobenzene	ND U	120	39	10	03/08/18 05:39	2/26/18	
Hexachlorobutadiene	ND U	120	36	10	03/08/18 05:39	2/26/18	
Hexachloroethane	ND U	120	30	10	03/08/18 05:39	2/26/18	
Indeno(1,2,3-cd)pyrene	66 J	120	38	10	03/08/18 05:39	2/26/18	
Naphthalene	ND U	120	35	10	03/08/18 05:39	2/26/18	
N-Nitrosodiphenylamine	ND U	120	38	10	03/08/18 05:39	2/26/18	
Pentachlorophenol (PCP)	ND U	1200	63	10	03/08/18 05:39	2/26/18	
Phenanthrene	130	120	43	10	03/08/18 05:39	2/26/18	
Phenol	ND U	350	37	10	03/08/18 05:39	2/26/18	
Pyrene	320	120	44	10	03/08/18 05:39	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:45
Date Received: 02/14/18 10:30

Sample Name: SED-3
Lab Code: K1801446-003

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	10 - 124	03/08/18 05:39	
2-Fluorobiphenyl	47	35 - 105	03/08/18 05:39	
Nitrobenzene-d5	52	10 - 84	03/08/18 05:39	
Phenol-d6	45	39 - 109	03/08/18 05:39	
p-Terphenyl-d14	69	30 - 102	03/08/18 05:39	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:05
Date Received: 02/14/18 10:30

Sample Name: SED-4
Lab Code: K1801446-004

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	100	27	10	03/08/18 06:08	2/26/18	
1,2-Dichlorobenzene	ND U	100	25	10	03/08/18 06:08	2/26/18	
1,4-Dichlorobenzene	ND U	100	26	10	03/08/18 06:08	2/26/18	
2,4-Dimethylphenol	ND U	510	65	10	03/08/18 06:08	2/26/18	
2-Methylnaphthalene	ND U	100	29	10	03/08/18 06:08	2/26/18	
2-Methylphenol	ND U	100	43	10	03/08/18 06:08	2/26/18	
4-Methylphenol	ND U	100	47	10	03/08/18 06:08	2/26/18	
Acenaphthene	51 J	100	33	10	03/08/18 06:08	2/26/18	
Acenaphthylene	ND U	100	27	10	03/08/18 06:08	2/26/18	
Anthracene	43 J	100	33	10	03/08/18 06:08	2/26/18	
Benz(a)anthracene	80 J	100	37	10	03/08/18 06:08	2/26/18	
Benzo(a)pyrene	57 J	100	37	10	03/08/18 06:08	2/26/18	
Benzo(b)fluoranthene	100	100	35	10	03/08/18 06:08	2/26/18	
Benzo(g,h,i)perylene	ND U	100	38	10	03/08/18 06:08	2/26/18	*
Benzo(k)fluoranthene	ND U	100	42	10	03/08/18 06:08	2/26/18	
Benzoic Acid	ND U	4100	990	10	03/08/18 06:08	2/26/18	
Benzyl Alcohol	ND U	210	51	10	03/08/18 06:08	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	1000	92	10	03/08/18 06:08	2/26/18	
Butyl Benzyl Phthalate	ND U	100	38	10	03/08/18 06:08	2/26/18	
Chrysene	140	100	43	10	03/08/18 06:08	2/26/18	
Dibenz(a,h)anthracene	ND U	100	31	10	03/08/18 06:08	2/26/18	
Dibenzofuran	ND U	100	35	10	03/08/18 06:08	2/26/18	
Diethyl Phthalate	ND U	100	38	10	03/08/18 06:08	2/26/18	
Dimethyl Phthalate	ND U	100	42	10	03/08/18 06:08	2/26/18	
Di-n-butyl Phthalate	ND U	210	50	10	03/08/18 06:08	2/26/18	
Di-n-octyl Phthalate	ND U	100	33	10	03/08/18 06:08	2/26/18	
Fluoranthene	520	100	38	10	03/08/18 06:08	2/26/18	
Fluorene	ND U	100	34	10	03/08/18 06:08	2/26/18	
Hexachlorobenzene	ND U	100	34	10	03/08/18 06:08	2/26/18	
Hexachlorobutadiene	ND U	100	31	10	03/08/18 06:08	2/26/18	
Hexachloroethane	ND U	100	26	10	03/08/18 06:08	2/26/18	
Indeno(1,2,3-cd)pyrene	34 J	100	33	10	03/08/18 06:08	2/26/18	
Naphthalene	ND U	100	30	10	03/08/18 06:08	2/26/18	
N-Nitrosodiphenylamine	ND U	100	33	10	03/08/18 06:08	2/26/18	
Pentachlorophenol (PCP)	ND U	1000	55	10	03/08/18 06:08	2/26/18	
Phenanthrene	220	100	37	10	03/08/18 06:08	2/26/18	
Phenol	ND U	310	32	10	03/08/18 06:08	2/26/18	
Pyrene	420	100	38	10	03/08/18 06:08	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:05
Date Received: 02/14/18 10:30

Sample Name: SED-4
Lab Code: K1801446-004

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	67	10 - 124	03/08/18 06:08	
2-Fluorobiphenyl	69	35 - 105	03/08/18 06:08	
Nitrobenzene-d5	75	10 - 84	03/08/18 06:08	
Phenol-d6	62	39 - 109	03/08/18 06:08	
p-Terphenyl-d14	79	30 - 102	03/08/18 06:08	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:35
Date Received: 02/14/18 10:30

Sample Name: SED-5
Lab Code: K1801446-005

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	130	35	10	03/08/18 06:36	2/26/18	
1,2-Dichlorobenzene	ND U	130	32	10	03/08/18 06:36	2/26/18	
1,4-Dichlorobenzene	ND U	130	33	10	03/08/18 06:36	2/26/18	
2,4-Dimethylphenol	ND U	660	83	10	03/08/18 06:36	2/26/18	
2-Methylnaphthalene	ND U	130	37	10	03/08/18 06:36	2/26/18	
2-Methylphenol	ND U	130	55	10	03/08/18 06:36	2/26/18	
4-Methylphenol	ND U	130	60	10	03/08/18 06:36	2/26/18	
Acenaphthene	ND U	130	43	10	03/08/18 06:36	2/26/18	
Acenaphthylene	ND U	130	35	10	03/08/18 06:36	2/26/18	
Anthracene	ND U	130	43	10	03/08/18 06:36	2/26/18	
Benz(a)anthracene	77 J	130	48	10	03/08/18 06:36	2/26/18	
Benzo(a)pyrene	75 J	130	48	10	03/08/18 06:36	2/26/18	
Benzo(b)fluoranthene	150	130	45	10	03/08/18 06:36	2/26/18	
Benzo(g,h,i)perylene	ND U	130	49	10	03/08/18 06:36	2/26/18	*
Benzo(k)fluoranthene	55 J	130	53	10	03/08/18 06:36	2/26/18	
Benzoic Acid	ND U	5300	1300	10	03/08/18 06:36	2/26/18	
Benzyl Alcohol	ND U	260	65	10	03/08/18 06:36	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	1300	120	10	03/08/18 06:36	2/26/18	
Butyl Benzyl Phthalate	ND U	130	49	10	03/08/18 06:36	2/26/18	
Chrysene	190	130	55	10	03/08/18 06:36	2/26/18	
Dibenz(a,h)anthracene	ND U	130	40	10	03/08/18 06:36	2/26/18	
Dibenzofuran	ND U	130	45	10	03/08/18 06:36	2/26/18	
Diethyl Phthalate	ND U	130	49	10	03/08/18 06:36	2/26/18	
Dimethyl Phthalate	ND U	130	53	10	03/08/18 06:36	2/26/18	
Di-n-butyl Phthalate	ND U	260	64	10	03/08/18 06:36	2/26/18	
Di-n-octyl Phthalate	ND U	130	43	10	03/08/18 06:36	2/26/18	
Fluoranthene	300	130	49	10	03/08/18 06:36	2/26/18	
Fluorene	ND U	130	44	10	03/08/18 06:36	2/26/18	
Hexachlorobenzene	ND U	130	44	10	03/08/18 06:36	2/26/18	
Hexachlorobutadiene	ND U	130	40	10	03/08/18 06:36	2/26/18	
Hexachloroethane	ND U	130	33	10	03/08/18 06:36	2/26/18	
Indeno(1,2,3-cd)pyrene	ND U	130	43	10	03/08/18 06:36	2/26/18	
Naphthalene	ND U	130	39	10	03/08/18 06:36	2/26/18	
N-Nitrosodiphenylamine	ND U	130	43	10	03/08/18 06:36	2/26/18	
Pentachlorophenol (PCP)	ND U	1300	70	10	03/08/18 06:36	2/26/18	
Phenanthrene	77 J	130	48	10	03/08/18 06:36	2/26/18	
Phenol	ND U	400	41	10	03/08/18 06:36	2/26/18	
Pyrene	200	130	49	10	03/08/18 06:36	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:35
Date Received: 02/14/18 10:30

Sample Name: SED-5
Lab Code: K1801446-005

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	62	10 - 124	03/08/18 06:36	
2-Fluorobiphenyl	53	35 - 105	03/08/18 06:36	
Nitrobenzene-d5	59	10 - 84	03/08/18 06:36	
Phenol-d6	51	39 - 109	03/08/18 06:36	
p-Terphenyl-d14	77	30 - 102	03/08/18 06:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:20
Date Received: 02/14/18 10:30

Sample Name: SED-6
Lab Code: K1801446-006

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	130	35	10	03/08/18 04:13	2/26/18	
1,2-Dichlorobenzene	ND U	130	32	10	03/08/18 04:13	2/26/18	
1,4-Dichlorobenzene	ND U	130	34	10	03/08/18 04:13	2/26/18	
2,4-Dimethylphenol	ND U	670	84	10	03/08/18 04:13	2/26/18	
2-Methylnaphthalene	ND U	130	38	10	03/08/18 04:13	2/26/18	
2-Methylphenol	ND U	130	55	10	03/08/18 04:13	2/26/18	
4-Methylphenol	ND U	130	60	10	03/08/18 04:13	2/26/18	
Acenaphthene	ND U	130	43	10	03/08/18 04:13	2/26/18	
Acenaphthylene	ND U	130	35	10	03/08/18 04:13	2/26/18	
Anthracene	68 J	130	43	10	03/08/18 04:13	2/26/18	
Benz(a)anthracene	130 J	130	48	10	03/08/18 04:13	2/26/18	
Benzo(a)pyrene	94 J	130	48	10	03/08/18 04:13	2/26/18	
Benzo(b)fluoranthene	200	130	46	10	03/08/18 04:13	2/26/18	
Benzo(g,h,i)perylene	ND U	130	50	10	03/08/18 04:13	2/26/18	*
Benzo(k)fluoranthene	76 J	130	54	10	03/08/18 04:13	2/26/18	
Benzoic Acid	ND U	5300	1300	10	03/08/18 04:13	2/26/18	
Benzyl Alcohol	ND U	270	66	10	03/08/18 04:13	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	1300	120	10	03/08/18 04:13	2/26/18	
Butyl Benzyl Phthalate	ND U	130	50	10	03/08/18 04:13	2/26/18	
Chrysene	280	130	55	10	03/08/18 04:13	2/26/18	
Dibenz(a,h)anthracene	ND U	130	40	10	03/08/18 04:13	2/26/18	
Dibenzofuran	ND U	130	46	10	03/08/18 04:13	2/26/18	
Diethyl Phthalate	ND U	130	50	10	03/08/18 04:13	2/26/18	
Dimethyl Phthalate	ND U	130	54	10	03/08/18 04:13	2/26/18	
Di-n-butyl Phthalate	ND U	270	64	10	03/08/18 04:13	2/26/18	
Di-n-octyl Phthalate	ND U	130	43	10	03/08/18 04:13	2/26/18	
Fluoranthene	400	130	50	10	03/08/18 04:13	2/26/18	
Fluorene	ND U	130	44	10	03/08/18 04:13	2/26/18	
Hexachlorobenzene	ND U	130	44	10	03/08/18 04:13	2/26/18	
Hexachlorobutadiene	ND U	130	40	10	03/08/18 04:13	2/26/18	
Hexachloroethane	ND U	130	34	10	03/08/18 04:13	2/26/18	
Indeno(1,2,3-cd)pyrene	62 J	130	43	10	03/08/18 04:13	2/26/18	
Naphthalene	ND U	130	39	10	03/08/18 04:13	2/26/18	
N-Nitrosodiphenylamine	ND U	130	43	10	03/08/18 04:13	2/26/18	
Pentachlorophenol (PCP)	ND U	1300	71	10	03/08/18 04:13	2/26/18	
Phenanthrene	140	130	48	10	03/08/18 04:13	2/26/18	
Phenol	ND U	400	42	10	03/08/18 04:13	2/26/18	
Pyrene	230	130	50	10	03/08/18 04:13	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:20
Date Received: 02/14/18 10:30

Sample Name: SED-6
Lab Code: K1801446-006

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	56	10 - 124	03/08/18 04:13	
2-Fluorobiphenyl	50	35 - 105	03/08/18 04:13	
Nitrobenzene-d5	59	10 - 84	03/08/18 04:13	
Phenol-d6	49	39 - 109	03/08/18 04:13	
p-Terphenyl-d14	70	30 - 102	03/08/18 04:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:35
Date Received: 02/14/18 10:30

Sample Name: SED-7
Lab Code: K1801446-007

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	38	13	5	03/08/18 07:05	2/26/18	
1,2-Dichlorobenzene	ND U	38	12	5	03/08/18 07:05	2/26/18	
1,4-Dichlorobenzene	ND U	38	13	5	03/08/18 07:05	2/26/18	
2,4-Dimethylphenol	ND U	190	32	5	03/08/18 07:05	2/26/18	
2-Methylnaphthalene	ND U	38	14	5	03/08/18 07:05	2/26/18	
2-Methylphenol	ND U	38	21	5	03/08/18 07:05	2/26/18	
4-Methylphenol	390	38	23	5	03/08/18 07:05	2/26/18	
Acenaphthene	ND U	38	16	5	03/08/18 07:05	2/26/18	
Acenaphthylene	ND U	38	13	5	03/08/18 07:05	2/26/18	
Anthracene	47	38	16	5	03/08/18 07:05	2/26/18	
Benz(a)anthracene	100	38	18	5	03/08/18 07:05	2/26/18	
Benzo(a)pyrene	98	38	18	5	03/08/18 07:05	2/26/18	
Benzo(b)fluoranthene	200	38	17	5	03/08/18 07:05	2/26/18	
Benzo(g,h,i)perylene	50	38	19	5	03/08/18 07:05	2/26/18	*
Benzo(k)fluoranthene	68	38	20	5	03/08/18 07:05	2/26/18	
Benzoic Acid	ND U	1500	480	5	03/08/18 07:05	2/26/18	
Benzyl Alcohol	ND U	75	25	5	03/08/18 07:05	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	380	45	5	03/08/18 07:05	2/26/18	
Butyl Benzyl Phthalate	ND U	38	19	5	03/08/18 07:05	2/26/18	
Chrysene	270	38	21	5	03/08/18 07:05	2/26/18	
Dibenz(a,h)anthracene	15 J	38	15	5	03/08/18 07:05	2/26/18	
Dibenzofuran	ND U	38	17	5	03/08/18 07:05	2/26/18	
Diethyl Phthalate	ND U	38	19	5	03/08/18 07:05	2/26/18	
Dimethyl Phthalate	33 J	38	20	5	03/08/18 07:05	2/26/18	
Di-n-butyl Phthalate	ND U	75	24	5	03/08/18 07:05	2/26/18	
Di-n-octyl Phthalate	ND U	38	16	5	03/08/18 07:05	2/26/18	
Fluoranthene	460	38	19	5	03/08/18 07:05	2/26/18	
Fluorene	ND U	38	17	5	03/08/18 07:05	2/26/18	
Hexachlorobenzene	ND U	38	17	5	03/08/18 07:05	2/26/18	
Hexachlorobutadiene	ND U	38	15	5	03/08/18 07:05	2/26/18	
Hexachloroethane	ND U	38	13	5	03/08/18 07:05	2/26/18	
Indeno(1,2,3-cd)pyrene	62	38	16	5	03/08/18 07:05	2/26/18	
Naphthalene	ND U	38	15	5	03/08/18 07:05	2/26/18	
N-Nitrosodiphenylamine	ND U	38	16	5	03/08/18 07:05	2/26/18	
Pentachlorophenol (PCP)	98 J	380	27	5	03/08/18 07:05	2/26/18	
Phenanthrene	120	38	18	5	03/08/18 07:05	2/26/18	
Phenol	140	110	16	5	03/08/18 07:05	2/26/18	
Pyrene	240	38	19	5	03/08/18 07:05	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:35
Date Received: 02/14/18 10:30

Sample Name: SED-7
Lab Code: K1801446-007

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	65	10 - 124	03/08/18 07:05	
2-Fluorobiphenyl	55	35 - 105	03/08/18 07:05	
Nitrobenzene-d5	56	10 - 84	03/08/18 07:05	
Phenol-d6	52	39 - 109	03/08/18 07:05	
p-Terphenyl-d14	74	30 - 102	03/08/18 07:05	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:40
Date Received: 02/14/18 10:30

Sample Name: SED-8
Lab Code: K1801446-008

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	100	27	10	03/08/18 07:33	2/26/18	
1,2-Dichlorobenzene	ND U	100	25	10	03/08/18 07:33	2/26/18	
1,4-Dichlorobenzene	ND U	100	26	10	03/08/18 07:33	2/26/18	
2,4-Dimethylphenol	ND U	510	65	10	03/08/18 07:33	2/26/18	
2-Methylnaphthalene	ND U	100	29	10	03/08/18 07:33	2/26/18	
2-Methylphenol	ND U	100	42	10	03/08/18 07:33	2/26/18	
4-Methylphenol	ND U	100	46	10	03/08/18 07:33	2/26/18	
Acenaphthene	ND U	100	33	10	03/08/18 07:33	2/26/18	
Acenaphthylene	81 J	100	27	10	03/08/18 07:33	2/26/18	
Anthracene	260	100	33	10	03/08/18 07:33	2/26/18	
Benz(a)anthracene	990	100	37	10	03/08/18 07:33	2/26/18	
Benzo(a)pyrene	800	100	37	10	03/08/18 07:33	2/26/18	
Benzo(b)fluoranthene	1800	100	35	10	03/08/18 07:33	2/26/18	
Benzo(g,h,i)perylene	370	100	38	10	03/08/18 07:33	2/26/18	*
Benzo(k)fluoranthene	670	100	41	10	03/08/18 07:33	2/26/18	
Benzoic Acid	ND U	4100	980	10	03/08/18 07:33	2/26/18	
Benzyl Alcohol	ND U	200	50	10	03/08/18 07:33	2/26/18	
Bis(2-ethylhexyl) Phthalate	230 J	1000	91	10	03/08/18 07:33	2/26/18	
Butyl Benzyl Phthalate	49 J	100	38	10	03/08/18 07:33	2/26/18	
Chrysene	2400	100	42	10	03/08/18 07:33	2/26/18	
Dibenz(a,h)anthracene	100	100	31	10	03/08/18 07:33	2/26/18	
Dibenzofuran	ND U	100	35	10	03/08/18 07:33	2/26/18	
Diethyl Phthalate	ND U	100	38	10	03/08/18 07:33	2/26/18	
Dimethyl Phthalate	130	100	41	10	03/08/18 07:33	2/26/18	
Di-n-butyl Phthalate	79 J	200	49	10	03/08/18 07:33	2/26/18	
Di-n-octyl Phthalate	ND U	100	33	10	03/08/18 07:33	2/26/18	
Fluoranthene	3700	100	38	10	03/08/18 07:33	2/26/18	
Fluorene	95 J	100	34	10	03/08/18 07:33	2/26/18	
Hexachlorobenzene	ND U	100	34	10	03/08/18 07:33	2/26/18	
Hexachlorobutadiene	ND U	100	31	10	03/08/18 07:33	2/26/18	
Hexachloroethane	ND U	100	26	10	03/08/18 07:33	2/26/18	
Indeno(1,2,3-cd)pyrene	420	100	33	10	03/08/18 07:33	2/26/18	
Naphthalene	ND U	100	30	10	03/08/18 07:33	2/26/18	
N-Nitrosodiphenylamine	ND U	100	33	10	03/08/18 07:33	2/26/18	
Pentachlorophenol (PCP)	280 J	1000	54	10	03/08/18 07:33	2/26/18	
Phenanthrene	640	100	37	10	03/08/18 07:33	2/26/18	
Phenol	ND U	310	32	10	03/08/18 07:33	2/26/18	
Pyrene	2300	100	38	10	03/08/18 07:33	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:40
Date Received: 02/14/18 10:30

Sample Name: SED-8
Lab Code: K1801446-008

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	60	10 - 124	03/08/18 07:33	
2-Fluorobiphenyl	50	35 - 105	03/08/18 07:33	
Nitrobenzene-d5	54	10 - 84	03/08/18 07:33	
Phenol-d6	47	39 - 109	03/08/18 07:33	
p-Terphenyl-d14	72	30 - 102	03/08/18 07:33	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:45
Date Received: 02/14/18 10:30

Sample Name: SED-9
Lab Code: K1801446-009

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	130	35	10	03/08/18 08:02	2/26/18	
1,2-Dichlorobenzene	ND U	130	32	10	03/08/18 08:02	2/26/18	
1,4-Dichlorobenzene	ND U	130	33	10	03/08/18 08:02	2/26/18	
2,4-Dimethylphenol	ND U	660	84	10	03/08/18 08:02	2/26/18	
2-Methylnaphthalene	ND U	130	37	10	03/08/18 08:02	2/26/18	
2-Methylphenol	ND U	130	55	10	03/08/18 08:02	2/26/18	
4-Methylphenol	190	130	60	10	03/08/18 08:02	2/26/18	
Acenaphthene	ND U	130	43	10	03/08/18 08:02	2/26/18	
Acenaphthylene	93 J	130	35	10	03/08/18 08:02	2/26/18	
Anthracene	380	130	43	10	03/08/18 08:02	2/26/18	
Benz(a)anthracene	1900	130	48	10	03/08/18 08:02	2/26/18	
Benzo(a)pyrene	1200	130	48	10	03/08/18 08:02	2/26/18	
Benzo(b)fluoranthene	2500	130	45	10	03/08/18 08:02	2/26/18	
Benzo(g,h,i)perylene	520	130	49	10	03/08/18 08:02	2/26/18	*
Benzo(k)fluoranthene	940	130	53	10	03/08/18 08:02	2/26/18	
Benzoic Acid	ND U	5300	1300	10	03/08/18 08:02	2/26/18	
Benzyl Alcohol	68 J	260	65	10	03/08/18 08:02	2/26/18	
Bis(2-ethylhexyl) Phthalate	370 J	1300	120	10	03/08/18 08:02	2/26/18	
Butyl Benzyl Phthalate	70 J	130	49	10	03/08/18 08:02	2/26/18	
Chrysene	4100	130	55	10	03/08/18 08:02	2/26/18	
Dibenz(a,h)anthracene	130	130	40	10	03/08/18 08:02	2/26/18	
Dibenzofuran	ND U	130	45	10	03/08/18 08:02	2/26/18	
Diethyl Phthalate	ND U	130	49	10	03/08/18 08:02	2/26/18	
Dimethyl Phthalate	190	130	53	10	03/08/18 08:02	2/26/18	
Di-n-butyl Phthalate	ND U	260	64	10	03/08/18 08:02	2/26/18	
Di-n-octyl Phthalate	170	130	43	10	03/08/18 08:02	2/26/18	
Fluoranthene	5500	130	49	10	03/08/18 08:02	2/26/18	
Fluorene	72 J	130	44	10	03/08/18 08:02	2/26/18	
Hexachlorobenzene	ND U	130	44	10	03/08/18 08:02	2/26/18	
Hexachlorobutadiene	ND U	130	40	10	03/08/18 08:02	2/26/18	
Hexachloroethane	ND U	130	33	10	03/08/18 08:02	2/26/18	
Indeno(1,2,3-cd)pyrene	580	130	43	10	03/08/18 08:02	2/26/18	
Naphthalene	ND U	130	39	10	03/08/18 08:02	2/26/18	
N-Nitrosodiphenylamine	ND U	130	43	10	03/08/18 08:02	2/26/18	
Pentachlorophenol (PCP)	ND U	1300	70	10	03/08/18 08:02	2/26/18	
Phenanthrene	690	130	48	10	03/08/18 08:02	2/26/18	
Phenol	46 J	400	41	10	03/08/18 08:02	2/26/18	
Pyrene	3200	130	49	10	03/08/18 08:02	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:45
Date Received: 02/14/18 10:30

Sample Name: SED-9
Lab Code: K1801446-009

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	63	10 - 124	03/08/18 08:02	
2-Fluorobiphenyl	62	35 - 105	03/08/18 08:02	
Nitrobenzene-d5	64	10 - 84	03/08/18 08:02	
Phenol-d6	54	39 - 109	03/08/18 08:02	
p-Terphenyl-d14	77	30 - 102	03/08/18 08:02	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:00
Date Received: 02/14/18 10:30

Sample Name: SED-10
Lab Code: K1801446-010

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	69	26	10	03/08/18 08:30	2/26/18	
1,2-Dichlorobenzene	ND U	69	24	10	03/08/18 08:30	2/26/18	
1,4-Dichlorobenzene	ND U	69	25	10	03/08/18 08:30	2/26/18	
2,4-Dimethylphenol	ND U	340	63	10	03/08/18 08:30	2/26/18	
2-Methylnaphthalene	ND U	69	28	10	03/08/18 08:30	2/26/18	
2-Methylphenol	ND U	69	41	10	03/08/18 08:30	2/26/18	
4-Methylphenol	ND U	69	45	10	03/08/18 08:30	2/26/18	
Acenaphthene	220	69	32	10	03/08/18 08:30	2/26/18	
Acenaphthylene	44 J	69	26	10	03/08/18 08:30	2/26/18	
Anthracene	420	69	32	10	03/08/18 08:30	2/26/18	
Benz(a)anthracene	1700	69	36	10	03/08/18 08:30	2/26/18	
Benzo(a)pyrene	1700	69	36	10	03/08/18 08:30	2/26/18	
Benzo(b)fluoranthene	2600	69	34	10	03/08/18 08:30	2/26/18	
Benzo(g,h,i)perylene	1400	69	37	10	03/08/18 08:30	2/26/18	*
Benzo(k)fluoranthene	960	69	40	10	03/08/18 08:30	2/26/18	
Benzoic Acid	ND U	2800	960	10	03/08/18 08:30	2/26/18	
Benzyl Alcohol	ND U	140	49	10	03/08/18 08:30	2/26/18	
Bis(2-ethylhexyl) Phthalate	340 J	690	89	10	03/08/18 08:30	2/26/18	
Butyl Benzyl Phthalate	ND U	69	37	10	03/08/18 08:30	2/26/18	
Chrysene	2300	69	41	10	03/08/18 08:30	2/26/18	
Dibenz(a,h)anthracene	280	69	30	10	03/08/18 08:30	2/26/18	
Dibenzofuran	97	69	34	10	03/08/18 08:30	2/26/18	
Diethyl Phthalate	ND U	69	37	10	03/08/18 08:30	2/26/18	
Dimethyl Phthalate	300	69	40	10	03/08/18 08:30	2/26/18	
Di-n-butyl Phthalate	94 J	140	48	10	03/08/18 08:30	2/26/18	
Di-n-octyl Phthalate	48 J	69	32	10	03/08/18 08:30	2/26/18	
Fluoranthene	5500	69	37	10	03/08/18 08:30	2/26/18	
Fluorene	200	69	33	10	03/08/18 08:30	2/26/18	
Hexachlorobenzene	ND U	69	33	10	03/08/18 08:30	2/26/18	
Hexachlorobutadiene	ND U	69	30	10	03/08/18 08:30	2/26/18	
Hexachloroethane	ND U	69	25	10	03/08/18 08:30	2/26/18	
Indeno(1,2,3-cd)pyrene	1200	69	32	10	03/08/18 08:30	2/26/18	
Naphthalene	32 J	69	29	10	03/08/18 08:30	2/26/18	
N-Nitrosodiphenylamine	ND U	69	32	10	03/08/18 08:30	2/26/18	
Pentachlorophenol (PCP)	240 J	690	53	10	03/08/18 08:30	2/26/18	
Phenanthrene	2300	69	36	10	03/08/18 08:30	2/26/18	
Phenol	ND U	210	31	10	03/08/18 08:30	2/26/18	
Pyrene	3500	69	37	10	03/08/18 08:30	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:00
Date Received: 02/14/18 10:30

Sample Name: SED-10
Lab Code: K1801446-010

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	61	10 - 124	03/08/18 08:30	
2-Fluorobiphenyl	57	35 - 105	03/08/18 08:30	
Nitrobenzene-d5	64	10 - 84	03/08/18 08:30	
Phenol-d6	55	39 - 109	03/08/18 08:30	
p-Terphenyl-d14	71	30 - 102	03/08/18 08:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:10
Date Received: 02/14/18 10:30

Sample Name: SED-11
Lab Code: K1801446-011

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	94	26	10	03/08/18 08:59	2/26/18	
1,2-Dichlorobenzene	ND U	94	24	10	03/08/18 08:59	2/26/18	
1,4-Dichlorobenzene	ND U	94	25	10	03/08/18 08:59	2/26/18	
2,4-Dimethylphenol	ND U	470	63	10	03/08/18 08:59	2/26/18	
2-Methylnaphthalene	ND U	94	28	10	03/08/18 08:59	2/26/18	
2-Methylphenol	ND U	94	41	10	03/08/18 08:59	2/26/18	
4-Methylphenol	ND U	94	45	10	03/08/18 08:59	2/26/18	
Acenaphthene	ND U	94	32	10	03/08/18 08:59	2/26/18	
Acenaphthylene	27 J	94	26	10	03/08/18 08:59	2/26/18	
Anthracene	77 J	94	32	10	03/08/18 08:59	2/26/18	
Benz(a)anthracene	250	94	36	10	03/08/18 08:59	2/26/18	
Benzo(a)pyrene	240	94	36	10	03/08/18 08:59	2/26/18	
Benzo(b)fluoranthene	440	94	34	10	03/08/18 08:59	2/26/18	
Benzo(g,h,i)perylene	120	94	37	10	03/08/18 08:59	2/26/18	*
Benzo(k)fluoranthene	160	94	40	10	03/08/18 08:59	2/26/18	
Benzoic Acid	ND U	3800	960	10	03/08/18 08:59	2/26/18	
Benzyl Alcohol	ND U	190	49	10	03/08/18 08:59	2/26/18	
Bis(2-ethylhexyl) Phthalate	150 J	940	89	10	03/08/18 08:59	2/26/18	
Butyl Benzyl Phthalate	ND U	94	37	10	03/08/18 08:59	2/26/18	
Chrysene	500	94	41	10	03/08/18 08:59	2/26/18	
Dibenz(a,h)anthracene	33 J	94	30	10	03/08/18 08:59	2/26/18	
Dibenzofuran	ND U	94	34	10	03/08/18 08:59	2/26/18	
Diethyl Phthalate	ND U	94	37	10	03/08/18 08:59	2/26/18	
Dimethyl Phthalate	100	94	40	10	03/08/18 08:59	2/26/18	
Di-n-butyl Phthalate	160 J	190	48	10	03/08/18 08:59	2/26/18	
Di-n-octyl Phthalate	ND U	94	32	10	03/08/18 08:59	2/26/18	
Fluoranthene	850	94	37	10	03/08/18 08:59	2/26/18	
Fluorene	ND U	94	33	10	03/08/18 08:59	2/26/18	
Hexachlorobenzene	ND U	94	33	10	03/08/18 08:59	2/26/18	
Hexachlorobutadiene	ND U	94	30	10	03/08/18 08:59	2/26/18	
Hexachloroethane	ND U	94	25	10	03/08/18 08:59	2/26/18	
Indeno(1,2,3-cd)pyrene	150	94	32	10	03/08/18 08:59	2/26/18	
Naphthalene	ND U	94	29	10	03/08/18 08:59	2/26/18	
N-Nitrosodiphenylamine	ND U	94	32	10	03/08/18 08:59	2/26/18	
Pentachlorophenol (PCP)	ND U	940	53	10	03/08/18 08:59	2/26/18	
Phenanthrene	220	94	36	10	03/08/18 08:59	2/26/18	
Phenol	ND U	280	31	10	03/08/18 08:59	2/26/18	
Pyrene	560	94	37	10	03/08/18 08:59	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:10
Date Received: 02/14/18 10:30

Sample Name: SED-11
Lab Code: K1801446-011

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	58	10 - 124	03/08/18 08:59	
2-Fluorobiphenyl	49	35 - 105	03/08/18 08:59	
Nitrobenzene-d5	57	10 - 84	03/08/18 08:59	
Phenol-d6	48	39 - 109	03/08/18 08:59	
p-Terphenyl-d14	65	30 - 102	03/08/18 08:59	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:15
Date Received: 02/14/18 10:30

Sample Name: SED-12
Lab Code: K1801446-012

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	77	26	10	03/08/18 09:28	2/26/18	
1,2-Dichlorobenzene	ND U	77	24	10	03/08/18 09:28	2/26/18	
1,4-Dichlorobenzene	ND U	77	25	10	03/08/18 09:28	2/26/18	
2,4-Dimethylphenol	ND U	390	63	10	03/08/18 09:28	2/26/18	
2-Methylnaphthalene	ND U	77	28	10	03/08/18 09:28	2/26/18	
2-Methylphenol	ND U	77	41	10	03/08/18 09:28	2/26/18	
4-Methylphenol	ND U	77	45	10	03/08/18 09:28	2/26/18	
Acenaphthene	ND U	77	32	10	03/08/18 09:28	2/26/18	
Acenaphthylene	ND U	77	26	10	03/08/18 09:28	2/26/18	
Anthracene	ND U	77	32	10	03/08/18 09:28	2/26/18	
Benz(a)anthracene	86	77	36	10	03/08/18 09:28	2/26/18	
Benzo(a)pyrene	100	77	36	10	03/08/18 09:28	2/26/18	
Benzo(b)fluoranthene	150	77	34	10	03/08/18 09:28	2/26/18	
Benzo(g,h,i)perylene	ND U	77	37	10	03/08/18 09:28	2/26/18	*
Benzo(k)fluoranthene	53 J	77	40	10	03/08/18 09:28	2/26/18	
Benzoic Acid	ND U	3100	960	10	03/08/18 09:28	2/26/18	
Benzyl Alcohol	ND U	150	49	10	03/08/18 09:28	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	770	89	10	03/08/18 09:28	2/26/18	
Butyl Benzyl Phthalate	ND U	77	37	10	03/08/18 09:28	2/26/18	
Chrysene	210	77	41	10	03/08/18 09:28	2/26/18	
Dibenz(a,h)anthracene	ND U	77	30	10	03/08/18 09:28	2/26/18	
Dibenzofuran	ND U	77	34	10	03/08/18 09:28	2/26/18	
Diethyl Phthalate	ND U	77	37	10	03/08/18 09:28	2/26/18	
Dimethyl Phthalate	ND U	77	40	10	03/08/18 09:28	2/26/18	
Di-n-butyl Phthalate	ND U	150	48	10	03/08/18 09:28	2/26/18	
Di-n-octyl Phthalate	ND U	77	32	10	03/08/18 09:28	2/26/18	
Fluoranthene	350	77	37	10	03/08/18 09:28	2/26/18	
Fluorene	ND U	77	33	10	03/08/18 09:28	2/26/18	
Hexachlorobenzene	ND U	77	33	10	03/08/18 09:28	2/26/18	
Hexachlorobutadiene	ND U	77	30	10	03/08/18 09:28	2/26/18	
Hexachloroethane	ND U	77	25	10	03/08/18 09:28	2/26/18	
Indeno(1,2,3-cd)pyrene	58 J	77	32	10	03/08/18 09:28	2/26/18	
Naphthalene	ND U	77	29	10	03/08/18 09:28	2/26/18	
N-Nitrosodiphenylamine	ND U	77	32	10	03/08/18 09:28	2/26/18	
Pentachlorophenol (PCP)	ND U	770	53	10	03/08/18 09:28	2/26/18	
Phenanthrene	120	77	36	10	03/08/18 09:28	2/26/18	
Phenol	ND U	230	31	10	03/08/18 09:28	2/26/18	
Pyrene	220	77	37	10	03/08/18 09:28	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:15
Date Received: 02/14/18 10:30

Sample Name: SED-12
Lab Code: K1801446-012

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	71	10 - 124	03/08/18 09:28	
2-Fluorobiphenyl	63	35 - 105	03/08/18 09:28	
Nitrobenzene-d5	70	10 - 84	03/08/18 09:28	
Phenol-d6	62	39 - 109	03/08/18 09:28	
p-Terphenyl-d14	82	30 - 102	03/08/18 09:28	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:25
Date Received: 02/14/18 10:30

Sample Name: SED-13
Lab Code: K1801446-013

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	66	26	10	03/08/18 09:56	2/26/18	
1,2-Dichlorobenzene	ND U	66	24	10	03/08/18 09:56	2/26/18	
1,4-Dichlorobenzene	ND U	66	25	10	03/08/18 09:56	2/26/18	
2,4-Dimethylphenol	ND U	330	63	10	03/08/18 09:56	2/26/18	
2-Methylnaphthalene	ND U	66	28	10	03/08/18 09:56	2/26/18	
2-Methylphenol	ND U	66	41	10	03/08/18 09:56	2/26/18	
4-Methylphenol	93	66	45	10	03/08/18 09:56	2/26/18	
Acenaphthene	67	66	32	10	03/08/18 09:56	2/26/18	
Acenaphthylene	39 J	66	26	10	03/08/18 09:56	2/26/18	
Anthracene	180	66	32	10	03/08/18 09:56	2/26/18	
Benz(a)anthracene	1000	66	36	10	03/08/18 09:56	2/26/18	
Benzo(a)pyrene	1200	66	36	10	03/08/18 09:56	2/26/18	
Benzo(b)fluoranthene	1900	66	34	10	03/08/18 09:56	2/26/18	
Benzo(g,h,i)perylene	1100	66	37	10	03/08/18 09:56	2/26/18	*
Benzo(k)fluoranthene	620	66	40	10	03/08/18 09:56	2/26/18	
Benzoic Acid	ND U	2600	960	10	03/08/18 09:56	2/26/18	
Benzyl Alcohol	ND U	130	49	10	03/08/18 09:56	2/26/18	
Bis(2-ethylhexyl) Phthalate	540 J	660	89	10	03/08/18 09:56	2/26/18	
Butyl Benzyl Phthalate	71	66	37	10	03/08/18 09:56	2/26/18	
Chrysene	1700	66	41	10	03/08/18 09:56	2/26/18	
Dibenz(a,h)anthracene	210	66	30	10	03/08/18 09:56	2/26/18	
Dibenzofuran	ND U	66	34	10	03/08/18 09:56	2/26/18	
Diethyl Phthalate	ND U	66	37	10	03/08/18 09:56	2/26/18	
Dimethyl Phthalate	840	66	40	10	03/08/18 09:56	2/26/18	
Di-n-butyl Phthalate	210	130	48	10	03/08/18 09:56	2/26/18	
Di-n-octyl Phthalate	ND U	66	32	10	03/08/18 09:56	2/26/18	
Fluoranthene	3400	66	37	10	03/08/18 09:56	2/26/18	
Fluorene	69	66	33	10	03/08/18 09:56	2/26/18	
Hexachlorobenzene	ND U	66	33	10	03/08/18 09:56	2/26/18	
Hexachlorobutadiene	ND U	66	30	10	03/08/18 09:56	2/26/18	
Hexachloroethane	ND U	66	25	10	03/08/18 09:56	2/26/18	
Indeno(1,2,3-cd)pyrene	950	66	32	10	03/08/18 09:56	2/26/18	
Naphthalene	ND U	66	29	10	03/08/18 09:56	2/26/18	
N-Nitrosodiphenylamine	ND U	66	32	10	03/08/18 09:56	2/26/18	
Pentachlorophenol (PCP)	230 J	660	53	10	03/08/18 09:56	2/26/18	
Phenanthrene	920	66	36	10	03/08/18 09:56	2/26/18	
Phenol	68 J	200	31	10	03/08/18 09:56	2/26/18	
Pyrene	2100	66	37	10	03/08/18 09:56	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:25
Date Received: 02/14/18 10:30

Sample Name: SED-13
Lab Code: K1801446-013

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	69	10 - 124	03/08/18 09:56	
2-Fluorobiphenyl	61	35 - 105	03/08/18 09:56	
Nitrobenzene-d5	68	10 - 84	03/08/18 09:56	
Phenol-d6	59	39 - 109	03/08/18 09:56	
p-Terphenyl-d14	75	30 - 102	03/08/18 09:56	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802442-04

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	ND U	6.0	2.6	1	03/08/18 02:19	2/26/18	
1,2-Dichlorobenzene	ND U	6.0	2.4	1	03/08/18 02:19	2/26/18	
1,4-Dichlorobenzene	ND U	6.0	2.5	1	03/08/18 02:19	2/26/18	
2,4-Dimethylphenol	ND U	25	6.3	1	03/08/18 02:19	2/26/18	
2-Methylnaphthalene	ND U	6.0	2.8	1	03/08/18 02:19	2/26/18	
2-Methylphenol	ND U	6.0	4.1	1	03/08/18 02:19	2/26/18	
4-Methylphenol	ND U	6.0	4.5	1	03/08/18 02:19	2/26/18	
Acenaphthene	ND U	6.0	3.2	1	03/08/18 02:19	2/26/18	
Acenaphthylene	ND U	6.0	2.6	1	03/08/18 02:19	2/26/18	
Anthracene	ND U	6.0	3.2	1	03/08/18 02:19	2/26/18	
Benz(a)anthracene	ND U	6.0	3.6	1	03/08/18 02:19	2/26/18	
Benzo(a)pyrene	ND U	6.0	3.6	1	03/08/18 02:19	2/26/18	
Benzo(b)fluoranthene	ND U	6.0	3.4	1	03/08/18 02:19	2/26/18	
Benzo(g,h,i)perylene	ND U	6.0	3.7	1	03/08/18 02:19	2/26/18	
Benzo(k)fluoranthene	ND U	6.0	4.0	1	03/08/18 02:19	2/26/18	
Benzoic Acid	ND U	200	96	1	03/08/18 02:19	2/26/18	
Benzyl Alcohol	ND U	9.9	4.9	1	03/08/18 02:19	2/26/18	
Bis(2-ethylhexyl) Phthalate	ND U	49	8.9	1	03/08/18 02:19	2/26/18	
Butyl Benzyl Phthalate	ND U	6.0	3.7	1	03/08/18 02:19	2/26/18	
Chrysene	ND U	6.0	4.1	1	03/08/18 02:19	2/26/18	
Dibenz(a,h)anthracene	ND U	6.0	3.0	1	03/08/18 02:19	2/26/18	
Dibenzofuran	ND U	6.0	3.4	1	03/08/18 02:19	2/26/18	
Diethyl Phthalate	ND U	6.0	3.7	1	03/08/18 02:19	2/26/18	
Dimethyl Phthalate	ND U	6.0	4.0	1	03/08/18 02:19	2/26/18	
Di-n-butyl Phthalate	ND U	9.9	4.8	1	03/08/18 02:19	2/26/18	
Di-n-octyl Phthalate	4.6 J	6.0	3.2	1	03/08/18 02:19	2/26/18	
Fluoranthene	ND U	6.0	3.7	1	03/08/18 02:19	2/26/18	
Fluorene	ND U	6.0	3.3	1	03/08/18 02:19	2/26/18	
Hexachlorobenzene	ND U	6.0	3.3	1	03/08/18 02:19	2/26/18	
Hexachlorobutadiene	ND U	6.0	3.0	1	03/08/18 02:19	2/26/18	
Hexachloroethane	ND U	6.0	2.5	1	03/08/18 02:19	2/26/18	
Indeno(1,2,3-cd)pyrene	ND U	6.0	3.2	1	03/08/18 02:19	2/26/18	
Naphthalene	ND U	6.0	2.9	1	03/08/18 02:19	2/26/18	
N-Nitrosodiphenylamine	ND U	6.0	3.2	1	03/08/18 02:19	2/26/18	
Pentachlorophenol (PCP)	ND U	49	5.3	1	03/08/18 02:19	2/26/18	
Phenanthrene	ND U	6.0	3.6	1	03/08/18 02:19	2/26/18	
Phenol	ND U	15	3.1	1	03/08/18 02:19	2/26/18	
Pyrene	ND U	6.0	3.7	1	03/08/18 02:19	2/26/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802442-04

Units: ug/Kg
Basis: Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	34	10 - 124	03/08/18 02:19	
2-Fluorobiphenyl	36	35 - 105	03/08/18 02:19	
Nitrobenzene-d5	38	10 - 84	03/08/18 02:19	
Phenol-d6	35	39 - 109	03/08/18 02:19	*
p-Terphenyl-d14	48	30 - 102	03/08/18 02:19	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	2,4,6-Tribromophenol	2-Fluorobiphenyl	Nitrobenzene-d5
		10 - 124	35 - 105	10 - 84
SED-1	K1801446-001	63	53	61
SED-2	K1801446-002	50	42	49
SED-3	K1801446-003	51	47	52
SED-4	K1801446-004	67	69	75
SED-5	K1801446-005	62	53	59
SED-6	K1801446-006	56	50	59
SED-7	K1801446-007	65	55	56
SED-8	K1801446-008	60	50	54
SED-9	K1801446-009	63	62	64
SED-10	K1801446-010	61	57	64
SED-11	K1801446-011	58	49	57
SED-12	K1801446-012	71	63	70
SED-13	K1801446-013	69	61	68
SED-6 MS	KQ1802442-01	63	61	67
SED-6 DMS	KQ1802442-02	58	59	63
Lab Control Sample	KQ1802442-03	68	65	64
Method Blank	KQ1802442-04	34	36	38

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Phenol-d6	p-Terphenyl-d14
		39 - 109	30 - 102
SED-1	K1801446-001	54	79
SED-2	K1801446-002	40	66
SED-3	K1801446-003	45	69
SED-4	K1801446-004	62	79
SED-5	K1801446-005	51	77
SED-6	K1801446-006	49	70
SED-7	K1801446-007	52	74
SED-8	K1801446-008	47	72
SED-9	K1801446-009	54	77
SED-10	K1801446-010	55	71
SED-11	K1801446-011	48	65
SED-12	K1801446-012	62	82
SED-13	K1801446-013	59	75
SED-6	KQ1802442-01	63	80
SED-6	KQ1802442-02	58	75
Lab Control Sample	KQ1802442-03	59	77
Method Blank	KQ1802442-04	35 *	48

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 01:50

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\030718\0307F034.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1803253-02
Analysis Lot: 582804
Signal ID:

	1,4-Dichlorobenzene-d4		Acenaphthene-d10		Chrysene-d12	
	Area	RT	Area	RT	Area	RT
ICAL Result ==>	92,302	4.94	156,999	9.54	311,735	15.32
Upper Limit ==>	184,604	5.44	313,998	10.04	623,470	15.82
Lower Limit ==>	46,151	4.44	78,500	9.04	155,868	14.82

Associated Analyses

Method Blank	KQ1802442-04	93063	4.94	146183	9.54	303809	15.31
Lab Control Sample	KQ1802442-03	92717	4.94	161866	9.53	301827	15.32
SED-6	KQ1802442-01	94856	4.93	159263	9.53	306704	15.31
SED-6	KQ1802442-02	92096	4.94	154167	9.53	310507	15.31
SED-6	K1801446-006	93453	4.94	148775	9.53	301916	15.31
SED-1	K1801446-001	92974	4.93	157546	9.53	291145	15.31
SED-2	K1801446-002	93054	4.93	155461	9.53	301031	15.31
SED-3	K1801446-003	90980	4.93	148385	9.53	281496	15.31
SED-4	K1801446-004	92473	4.94	158576	9.54	323208	15.32
SED-5	K1801446-005	91041	4.93	144763	9.54	296741	15.31
SED-7	K1801446-007	91766	4.94	158029	9.53	294687	15.32
SED-8	K1801446-008	91772	4.93	149233	9.54	317825	15.32
SED-9	K1801446-009	91617	4.94	148062	9.54	315215	15.32
SED-10	K1801446-010	91089	4.93	149784	9.54	337984	15.32
SED-11	K1801446-011	92924	4.93	153386	9.54	314593	15.31
SED-12	K1801446-012	91810	4.94	149319	9.53	329129	15.32
SED-13	K1801446-013	89980	4.94	153401	9.54	334697	15.32

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 01:50

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\030718\0307F034.D\
Instrument ID: K-MS-29
Analysis Method: 8270D

Lab Code: KQ1803253-02
Analysis Lot: 582804
Signal ID:

	Naphthalene-d8		Perylene-d12		Phenanthrene-d10	
	Area	RT	Area	RT	Area	RT
ICAL Result ==>	349,150	6.18	289,455	18.45	273,402	11.91
Upper Limit ==>	698,300	6.68	578,910	18.95	546,804	12.41
Lower Limit ==>	174,575	5.68	144,728	17.95	136,701	11.41

Associated Analyses

Method Blank	KQ1802442-04	353554	6.18	311364	18.45	269942	11.91
Lab Control Sample	KQ1802442-03	353510	6.18	308816	18.45	290304	11.91
SED-6	KQ1802442-01	360884	6.18	326615	18.45	296731	11.91
SED-6	KQ1802442-02	353238	6.17	330448	18.45	283838	11.91
SED-6	K1801446-006	351323	6.17	318561	18.45	283238	11.91
SED-1	K1801446-001	359318	6.17	303406	18.45	281044	11.91
SED-2	K1801446-002	347089	6.17	315908	18.45	280776	11.91
SED-3	K1801446-003	338070	6.18	295960	18.45	274962	11.91
SED-4	K1801446-004	354603	6.18	343476	18.46	293867	11.91
SED-5	K1801446-005	335895	6.18	323702	18.45	267053	11.91
SED-7	K1801446-007	348283	6.17	311167	18.45	281986	11.91
SED-8	K1801446-008	340384	6.17	339760	18.45	280052	11.91
SED-9	K1801446-009	347171	6.18	331293	18.46	283288	11.91
SED-10	K1801446-010	334711	6.18	354610	18.46	294428	11.91
SED-11	K1801446-011	342318	6.17	341846	18.45	274670	11.91
SED-12	K1801446-012	339493	6.18	360122	18.47	291099	11.91
SED-13	K1801446-013	340991	6.18	358094	18.46	291120	11.91

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/8/18
Date Extracted: 02/26/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: SED-6 **Units:** ug/Kg
Lab Code: K1801446-006 **Basis:** Dry
Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Matrix Spike KQ1802442-01				Duplicate Matrix Spike KQ1802442-02				% Rec Limits	RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec				
1,2,4-Trichlorobenzene	ND U	214	333	64	192	333	58	18-85	11	40	
1,2-Dichlorobenzene	ND U	213	333	64	183	333	55	17-79	15	40	
1,4-Dichlorobenzene	ND U	215	333	65	185	333	56	15-80	15	40	
2,4-Dimethylphenol	ND U	753	998	75	646 J	998	65	10-103	15	40	
2-Methylnaphthalene	ND U	223	333	67	191	333	57	10-117	16	40	
2-Methylphenol	ND U	222	333	67	183	333	55	10-94	19	40	
4-Methylphenol	ND U	226	333	68	194	333	58	10-103	15	40	
Acenaphthene	ND U	254	333	76	221	333	67	10-108	14	40	
Acenaphthylene	ND U	243	333	73	204	333	61	10-108	17	40	
Anthracene	68 J	376	333	93	298	333	69	10-119	23	40	
Benz(a)anthracene	130 J	391	333	79	332	333	61	13-120	16	40	
Benzo(a)pyrene	94 J	361	333	80	298	333	61	10-148	19	40	
Benzo(b)fluoranthene	200	464	333	79	406	333	62	10-128	13	40	
Benzo(g,h,i)perylene	ND U	305	333	92	258	333	78	10-126	16	40	
Benzo(k)fluoranthene	76 J	367	333	88	305	333	69	15-114	19	40	
Benzoic Acid	ND U	ND U	998	0 *	ND U	998	0 *	10-125	NC	40	
Benzyl Alcohol	ND U	226 J	333	68	190 J	333	57	16-83	17	40	
Bis(2-ethylhexyl) Phthalate	ND U	290 J	333	87	261 J	333	78	23-123	11	40	
Butyl Benzyl Phthalate	ND U	354	333	106	299	333	90	18-123	17	40	
Chrysene	280	528	333	73	448	333	49	10-138	16	40	
Dibenz(a,h)anthracene	ND U	262	333	79	234	333	70	29-102	11	40	
Dibenzofuran	ND U	265	333	80	229	333	69	15-96	15	40	
Diethyl Phthalate	ND U	290	333	87	249	333	75	20-108	15	40	
Dimethyl Phthalate	ND U	274	333	82	230	333	69	11-109	17	40	
Di-n-butyl Phthalate	ND U	358	333	108	314	333	94	16-130	13	40	
Di-n-octyl Phthalate	ND U	390	333	117	352	333	106	25-120	10	40	
Fluoranthene	400	863	333	139	817	333	125	10-140	5	40	
Fluorene	ND U	299	333	90	250	333	75	10-110	18	40	
Hexachlorobenzene	ND U	238	333	72	209	333	63	33-92	13	40	
Hexachlorobutadiene	ND U	219	333	66	186	333	56	18-87	16	40	
Hexachloroethane	ND U	221	333	66	184	333	55	10-111	18	40	
Indeno(1,2,3-cd)pyrene	62 J	304	333	73	266	333	61	10-143	13	40	
Naphthalene	ND U	239	333	72	202	333	61	10-109	17	40	
N-Nitrosodiphenylamine	ND U	249	333	75	208	333	63	10-118	18	40	
Pentachlorophenol (PCP)	ND U	506 J	333	152 *	469 J	333	141 *	10-134	8	40	

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/8/18
Date Extracted: 02/26/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike KQ1802442-01			Duplicate Matrix Spike KQ1802442-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Phenanthrene	140	451	333	94	386	333	74	10-132	16	40
Phenol	ND U	216 J	333	65	180 J	333	54	10-93	18	40
Pyrene	230	580	333	105	523	333	88	10-132	10	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/08/18
Date Extracted: 02/26/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry
Analysis Lot: 582804

Lab Control Sample
KQ1802442-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,2,4-Trichlorobenzene	139	250	56	30-75
1,2-Dichlorobenzene	135	250	54	30-70
1,4-Dichlorobenzene	133	250	53	30-69
2,4-Dimethylphenol	299	750	40	21-87
2-Methylnaphthalene	147	250	59	26-80
2-Methylphenol	125	250	50	27-74
4-Methylphenol	127	250	51	26-79
Acenaphthene	155	250	62	31-77
Acenaphthylene	157	250	63	30-79
Anthracene	178	250	71	36-87
Benz(a)anthracene	174	250	69	43-98
Benzo(a)pyrene	178	250	71	43-102
Benzo(b)fluoranthene	178	250	71	39-99
Benzo(g,h,i)perylene	206	250	83	39-99
Benzo(k)fluoranthene	185	250	74	38-93
Benzoic Acid	201 J	750	27	10-34
Benzyl Alcohol	144	250	58	25-83
Bis(2-ethylhexyl) Phthalate	198	250	79	39-113
Butyl Benzyl Phthalate	200	250	80	43-103
Chrysene	179	250	72	41-98
Dibenz(a,h)anthracene	179	250	71	38-101
Dibenzofuran	158	250	63	30-78
Diethyl Phthalate	190	250	76	35-95
Dimethyl Phthalate	177	250	71	36-85
Di-n-butyl Phthalate	216	250	86	30-120
Di-n-octyl Phthalate	214	250	85	41-105
Fluoranthene	202	250	81	25-115
Fluorene	167	250	67	30-81
Hexachlorobenzene	154	250	62	36-86
Hexachlorobutadiene	138	250	55	30-79
Hexachloroethane	133	250	53	23-76
Indeno(1,2,3-cd)pyrene	172	250	69	36-105
Naphthalene	143	250	57	30-74
N-Nitrosodiphenylamine	160	250	64	37-87
Pentachlorophenol (PCP)	150	250	60	19-103
Phenanthrene	166	250	66	36-85
Phenol	138	250	55	27-75
Pyrene	166	250	66	40-99

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 02:19
Date Extracted: 02/26/18

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KQ1802442-04
Analysis Method: 8270D
Prep Method: EPA 3541

Instrument ID: K-MS-29
File ID: J:\MS29\DATA\030718\0307F035.D\
Analysis Lot: 582804
Extraction Lot: 308941

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1802442-03	J:\MS29\DATA\030718\0307F036.D\	03/08/18 02:47
SED-6	KQ1802442-01	J:\MS29\DATA\030718\0307F037.D\	03/08/18 03:16
SED-6	KQ1802442-02	J:\MS29\DATA\030718\0307F038.D\	03/08/18 03:45
SED-6	K1801446-006	J:\MS29\DATA\030718\0307F039.D\	03/08/18 04:13
SED-1	K1801446-001	J:\MS29\DATA\030718\0307F040.D\	03/08/18 04:42
SED-2	K1801446-002	J:\MS29\DATA\030718\0307F041.D\	03/08/18 05:10
SED-3	K1801446-003	J:\MS29\DATA\030718\0307F042.D\	03/08/18 05:39
SED-4	K1801446-004	J:\MS29\DATA\030718\0307F043.D\	03/08/18 06:08
SED-5	K1801446-005	J:\MS29\DATA\030718\0307F044.D\	03/08/18 06:36
SED-7	K1801446-007	J:\MS29\DATA\030718\0307F045.D\	03/08/18 07:05
SED-8	K1801446-008	J:\MS29\DATA\030718\0307F046.D\	03/08/18 07:33
SED-9	K1801446-009	J:\MS29\DATA\030718\0307F047.D\	03/08/18 08:02
SED-10	K1801446-010	J:\MS29\DATA\030718\0307F048.D\	03/08/18 08:30
SED-11	K1801446-011	J:\MS29\DATA\030718\0307F049.D\	03/08/18 08:59
SED-12	K1801446-012	J:\MS29\DATA\030718\0307F050.D\	03/08/18 09:28
SED-13	K1801446-013	J:\MS29\DATA\030718\0307F051.D\	03/08/18 09:56

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 02:47
Date Extracted: 02/26/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample
Lab Code: KQ1802442-03
Analysis Method: 8270D
Prep Method: EPA 3541

Instrument ID:K-MS-29
File ID:J:\MS29\DATA\030718\0307F036.D\
Analysis Lot:582804
Extraction Lot:308941

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1802442-04	J:\MS29\DATA\030718\0307F035.D\	03/08/18 02:19
SED-6	KQ1802442-01	J:\MS29\DATA\030718\0307F037.D\	03/08/18 03:16
SED-6	KQ1802442-02	J:\MS29\DATA\030718\0307F038.D\	03/08/18 03:45
SED-6	K1801446-006	J:\MS29\DATA\030718\0307F039.D\	03/08/18 04:13
SED-1	K1801446-001	J:\MS29\DATA\030718\0307F040.D\	03/08/18 04:42
SED-2	K1801446-002	J:\MS29\DATA\030718\0307F041.D\	03/08/18 05:10
SED-3	K1801446-003	J:\MS29\DATA\030718\0307F042.D\	03/08/18 05:39
SED-4	K1801446-004	J:\MS29\DATA\030718\0307F043.D\	03/08/18 06:08
SED-5	K1801446-005	J:\MS29\DATA\030718\0307F044.D\	03/08/18 06:36
SED-7	K1801446-007	J:\MS29\DATA\030718\0307F045.D\	03/08/18 07:05
SED-8	K1801446-008	J:\MS29\DATA\030718\0307F046.D\	03/08/18 07:33
SED-9	K1801446-009	J:\MS29\DATA\030718\0307F047.D\	03/08/18 08:02
SED-10	K1801446-010	J:\MS29\DATA\030718\0307F048.D\	03/08/18 08:30
SED-11	K1801446-011	J:\MS29\DATA\030718\0307F049.D\	03/08/18 08:59
SED-12	K1801446-012	J:\MS29\DATA\030718\0307F050.D\	03/08/18 09:28
SED-13	K1801446-013	J:\MS29\DATA\030718\0307F051.D\	03/08/18 09:56

ALS Group USA, Corp.
dba ALS Environmental

QC/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 01:22

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\030718\0307F033.D\
Instrument ID: K-MS-29

Analytical Method: 8270D
Analysis Lot: 582804

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	27.68	631530	Pass
68	69	0	2	1.61	12546	Pass
69	198	0	100	34.10	778016	Pass
70	69	0	2	0.51	3957	Pass
127	198	10	80	44.72	1020160	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	80.56	2281301	Pass
199	198	5	9	6.72	153322	Pass
275	198	10	60	29.09	663594	Pass
365	442	1	50	2.50	70805	Pass
441	443	0.01	100	78.81	440042	Pass
442	442	30	100	100.00	2831872	Pass
443	442	15	24	19.72	558336	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1803253-02	J:\MS29\DATA\030718\0307F034.D\	03/08/18 01:50	
Method Blank	KQ1802442-04	J:\MS29\DATA\030718\0307F035.D\	03/08/18 02:19	
Lab Control Sample	KQ1802442-03	J:\MS29\DATA\030718\0307F036.D\	03/08/18 02:47	
SED-6	KQ1802442-01	J:\MS29\DATA\030718\0307F037.D\	03/08/18 03:16	
SED-6	KQ1802442-02	J:\MS29\DATA\030718\0307F038.D\	03/08/18 03:45	
SED-6	K1801446-006	J:\MS29\DATA\030718\0307F039.D\	03/08/18 04:13	
SED-1	K1801446-001	J:\MS29\DATA\030718\0307F040.D\	03/08/18 04:42	
SED-2	K1801446-002	J:\MS29\DATA\030718\0307F041.D\	03/08/18 05:10	
SED-3	K1801446-003	J:\MS29\DATA\030718\0307F042.D\	03/08/18 05:39	
SED-4	K1801446-004	J:\MS29\DATA\030718\0307F043.D\	03/08/18 06:08	
SED-5	K1801446-005	J:\MS29\DATA\030718\0307F044.D\	03/08/18 06:36	
SED-7	K1801446-007	J:\MS29\DATA\030718\0307F045.D\	03/08/18 07:05	
SED-8	K1801446-008	J:\MS29\DATA\030718\0307F046.D\	03/08/18 07:33	
SED-9	K1801446-009	J:\MS29\DATA\030718\0307F047.D\	03/08/18 08:02	
SED-10	K1801446-010	J:\MS29\DATA\030718\0307F048.D\	03/08/18 08:30	
SED-11	K1801446-011	J:\MS29\DATA\030718\0307F049.D\	03/08/18 08:59	
SED-12	K1801446-012	J:\MS29\DATA\030718\0307F050.D\	03/08/18 09:28	
SED-13	K1801446-013	J:\MS29\DATA\030718\0307F051.D\	03/08/18 09:56	

Client: V g' sñl Dmùtqñt dñs kRdqùbdr Hrb-
Project: I dñr dmRglòx' ç Rdchì dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: J B07/ / / 74
Instrument ID: J ,L R, 18

Signal ID: 0

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800085-01	SVO_LL ICAL @ 0.05ug/mL SVM57-73A	J:\MS29\DATA\022718\0227F003.D	02/27/2018 09:27
02	KC1800085-02	SVO_LL ICAL @ 0.10ug/mL SVM57-73B	J:\MS29\DATA\022718\0227F004.D	02/27/2018 09:55
03	KC1800085-03	SVO_LL ICAL @ 0.20ug/mL SVM57-73C	J:\MS29\DATA\022718\0227F005.D	02/27/2018 10:24
04	KC1800085-04	SVO_LL ICAL @ 0.50ug/mL SVM57-73D	J:\MS29\DATA\022718\0227F006.D	02/27/2018 10:52
05	KC1800085-05	SVO_LL ICAL @ 1.0ug/mL SVM57-73E	J:\MS29\DATA\022718\0227F007.D	02/27/2018 11:21
06	KC1800085-06	SVO_LL ICAL @ 2.0ug/mL SVM57-73F	J:\MS29\DATA\022718\0227F008.D	02/27/2018 11:50
07	KC1800085-07	SVO_LL ICAL @ 3.0ug/mL SVM57-73G	J:\MS29\DATA\022718\0227F009.D	02/27/2018 12:18
08	KC1800085-08	SVO_LL ICAL @ 5.0ug/mL SVM57-73H	J:\MS29\DATA\022718\0227F010.D	02/27/2018 12:47
09	KC1800085-09	SVO_LL ICAL @ 7.0ug/mL SVM57-73I	J:\MS29\DATA\022718\0227F011.D	02/27/2018 13:15
10	KC1800085-10	SVO_LL ICAL @ 10ug/mL SVM57-73J	J:\MS29\DATA\022718\0227F012.D	02/27/2018 13:44

Analyte

1,2,4-Trichlorobenzene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.301	02	100.000	0.272	03	200.000	0.2942	04	500.000	0.2864
05	1000.000	0.2928	06	2000.000	0.2982	07	3000.000	0.2935	08	5000.000	0.2965
09	7000.000	0.2958	10	10000.000	0.2968						

1,2-Dichlorobenzene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.393	02	100.000	1.345	03	200.000	1.392	04	500.000	1.41
05	1000.000	1.438	06	2000.000	1.446	07	3000.000	1.439	08	5000.000	1.442
09	7000.000	1.443	10	10000.000	1.455						

1,4-Dichlorobenzene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.454	02	100.000	1.412	03	200.000	1.496	04	500.000	1.505
05	1000.000	1.524	06	2000.000	1.551	07	3000.000	1.53	08	5000.000	1.539
09	7000.000	1.539	10	10000.000	1.548						

2,4-Dimethylphenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.2437	02	100.000	0.2567	03	200.000	0.2958	04	500.000	0.2627
05	1000.000	0.269	06	2000.000	0.2899	07	3000.000	0.2824	08	5000.000	0.2988
09	7000.000	0.2847	10	10000.000	0.2938						

2-Methylnaphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.4969	02	100.000	0.4948	03	200.000	0.5116	04	500.000	0.5267
05	1000.000	0.5348	06	2000.000	0.5543	07	3000.000	0.5498	08	5000.000	0.5569
09	7000.000	0.5612	10	10000.000	0.5642						

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñm dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdch dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte

2-Methylphenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.03	02	100.000	1.012	03	200.000	1.032	04	500.000	1.053
05	1000.000	1.085	06	2000.000	1.113	07	3000.000	1.105	08	5000.000	1.121
09	7000.000	1.11	10	10000.000	1.128						

4-Methylphenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.372	02	100.000	1.402	03	200.000	1.414	04	500.000	1.463
05	1000.000	1.494	06	2000.000	1.577	07	3000.000	1.581	08	5000.000	1.587
09	7000.000	1.586	10	10000.000	1.634						

Acenaphthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.1	02	100.000	1.079	03	200.000	1.161	04	500.000	1.145
05	1000.000	1.177	06	2000.000	1.197	07	3000.000	1.2	08	5000.000	1.201
09	7000.000	1.187	10	10000.000	1.206						

Acenaphthylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.667	02	100.000	1.563	03	200.000	1.763	04	500.000	1.797
05	1000.000	1.885	06	2000.000	2.035	07	3000.000	2.008	08	5000.000	1.996
09	7000.000	2.026	10	10000.000	2.048						

Anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9071	02	100.000	0.873	03	200.000	0.9621	04	500.000	0.9979
05	1000.000	1.024	06	2000.000	1.087	07	3000.000	1.077	08	5000.000	1.101
09	7000.000	1.09	10	10000.000	1.085						

Benz(a)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.107	02	100.000	1.041	03	200.000	1.041	04	500.000	1.065
05	1000.000	1.076	06	2000.000	1.144	07	3000.000	1.165	08	5000.000	1.2
09	7000.000	1.24	10	10000.000	1.21						

Benzo(a)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9545	02	100.000	0.879	03	200.000	0.8756	04	500.000	0.9066
05	1000.000	0.9176	06	2000.000	0.9789	07	3000.000	0.9782	08	5000.000	1.035
09	7000.000	1.027	10	10000.000	1.03						

Benzo(b)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9885	02	100.000	0.9241	03	200.000	0.9711	04	500.000	1.002
05	1000.000	0.997	06	2000.000	1.09	07	3000.000	1.089	08	5000.000	1.168
09	7000.000	1.163	10	10000.000	1.166						

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñm dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdch dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte

Benzo(g,h,i)perylene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	1.046	03	200.000	1.094	04	500.000	1.083	05	1000.000	0.7536
06	2000.000	0.7578	07	3000.000	0.7686	08	5000.000	0.8049	09	7000.000	0.7964
10	10000.000	0.8033									

Benzo(k)fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9747	02	100.000	0.931	03	200.000	0.9611	04	500.000	1.009
05	1000.000	1.051	06	2000.000	1.128	07	3000.000	1.113	08	5000.000	1.179
09	7000.000	1.18	10	10000.000	1.165						

Benzoic Acid

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	500.000	0.05184	05	1000.000	0.06672	06	2000.000	0.09021	07	3000.000	0.1114
08	5000.000	0.1217	09	7000.000	0.1313	10	10000.000	0.1425			

Benzy Alcohol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.7515	02	100.000	0.773	03	200.000	0.796	04	500.000	0.8018
05	1000.000	0.8403	06	2000.000	0.8771	07	3000.000	0.8874	08	5000.000	0.8977
09	7000.000	0.9073	10	10000.000	0.9251						

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.6474	03	200.000	0.5702	04	500.000	0.6761	05	1000.000	0.7395
06	2000.000	0.8035	07	3000.000	0.8376	08	5000.000	0.8421	09	7000.000	0.8761
10	10000.000	0.8523									

Butyl Benzyl Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.3848	02	100.000	0.3401	03	200.000	0.3698	04	500.000	0.3954
05	1000.000	0.4126	06	2000.000	0.4662	07	3000.000	0.5021	08	5000.000	0.529
09	7000.000	0.5619	10	10000.000	0.5572						

Chrysene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.023	02	100.000	1.029	03	200.000	1.072	04	500.000	1.079
05	1000.000	1.091	06	2000.000	1.112	07	3000.000	1.094	08	5000.000	1.097
09	7000.000	1.111	10	10000.000	1.1						

Dibenz(a,h)anthracene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.044	02	100.000	1.056	03	200.000	0.9967	04	500.000	1.026
05	1000.000	0.9463	06	2000.000	0.9357	07	3000.000	0.93	08	5000.000	1.002
09	7000.000	1.016	10	10000.000	1.038						

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñmì dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdchì dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte

Dibenzofuran

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.513	02	100.000	1.496	03	200.000	1.609	04	500.000	1.613
05	1000.000	1.638	06	2000.000	1.704	07	3000.000	1.683	08	5000.000	1.683
09	7000.000	1.667	10	10000.000	1.701						

Diethyl Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.247	02	100.000	1.167	03	200.000	1.27	04	500.000	1.269
05	1000.000	1.291	06	2000.000	1.357	07	3000.000	1.34	08	5000.000	1.372
09	7000.000	1.371	10	10000.000	1.387						

Dimethyl Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.25	02	100.000	1.208	03	200.000	1.306	04	500.000	1.319
05	1000.000	1.349	06	2000.000	1.396	07	3000.000	1.378	08	5000.000	1.394
09	7000.000	1.377	10	10000.000	1.409						

Di-n-butyl Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9809	02	100.000	0.9223	03	200.000	0.9817	04	500.000	1.023
05	1000.000	1.082	06	2000.000	1.154	07	3000.000	1.162	08	5000.000	1.202
09	7000.000	1.191	10	10000.000	1.216						

Di-n-octyl Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.624	03	200.000	0.6395	04	500.000	0.791	05	1000.000	0.8874
06	2000.000	1.043	07	3000.000	1.113	08	5000.000	1.228	09	7000.000	1.241
10	10000.000	1.312									

Fluoranthene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.105	02	100.000	0.9447	03	200.000	1.04	04	500.000	1.032
05	1000.000	1.034	06	2000.000	1.087	07	3000.000	1.085	08	5000.000	1.112
09	7000.000	1.083	10	10000.000	1.087						

Fluorene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.175	02	100.000	1.158	03	200.000	1.253	04	500.000	1.297
05	1000.000	1.315	06	2000.000	1.387	07	3000.000	1.362	08	5000.000	1.371
09	7000.000	1.358	10	10000.000	1.391						

Hexachlorobenzene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.2778	02	100.000	0.2718	03	200.000	0.2881	04	500.000	0.2801
05	1000.000	0.2916	06	2000.000	0.2991	07	3000.000	0.2889	08	5000.000	0.2871
09	7000.000	0.2902	10	10000.000	0.2929						

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñm dñs kRdçùbdr Hñb-
Project: I dñr dmRgùx' ç Rdçh dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte

Hexachlorobutadiene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.1822	02	100.000	0.1585	03	200.000	0.1635	04	500.000	0.1676
05	1000.000	0.1675	06	2000.000	0.1707	07	3000.000	0.1673	08	5000.000	0.1697
09	7000.000	0.1695	10	10000.000	0.1705						

Hexachloroethane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.5399	02	100.000	0.4954	03	200.000	0.5124	04	500.000	0.5218
05	1000.000	0.5294	06	2000.000	0.5484	07	3000.000	0.5528	08	5000.000	0.5548
09	7000.000	0.5586	10	10000.000	0.5663						

Indeno(1,2,3-cd)pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.031	02	100.000	0.9785	03	200.000	1.04	04	500.000	1.008
05	1000.000	0.8101	06	2000.000	0.8678	07	3000.000	0.8821	08	5000.000	0.9144
09	7000.000	0.9448	10	10000.000	0.9478						

Naphthalene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9997	02	100.000	0.9166	03	200.000	0.9849	04	500.000	0.9821
05	1000.000	0.9834	06	2000.000	1.012	07	3000.000	0.9892	08	5000.000	0.9982
09	7000.000	0.9976	10	10000.000	1.002						

N-Nitrosodiphenylamine

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.7863	02	100.000	0.7789	03	200.000	0.8505	04	500.000	0.875
05	1000.000	0.872	06	2000.000	0.9148	07	3000.000	0.9031	08	5000.000	0.9136
09	7000.000	0.895	10	10000.000	0.8923						

Pentachlorophenol (PCP)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	500.000	0.08534	05	1000.000	0.09558	06	2000.000	0.1169	07	3000.000	0.1251
08	5000.000	0.1349	09	7000.000	0.1415	10	10000.000	0.1476			

Phenanthrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.068	02	100.000	0.9884	03	200.000	1.046	04	500.000	1.062
05	1000.000	1.064	06	2000.000	1.108	07	3000.000	1.091	08	5000.000	1.097
09	7000.000	1.098	10	10000.000	1.08						

Phenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.52	02	100.000	1.518	03	200.000	1.586	04	500.000	1.59
05	1000.000	1.621	06	2000.000	1.693	07	3000.000	1.683	08	5000.000	1.695
09	7000.000	1.698	10	10000.000	1.719						

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtqñl dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdçh dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte

Pyrene

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.326	02	100.000	1.277	03	200.000	1.451	04	500.000	1.463
05	1000.000	1.341	06	2000.000	1.339	07	3000.000	1.334	08	5000.000	1.249
09	7000.000	1.311	10	10000.000	1.235						

2,4,6-Tribromophenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	500.000	0.1042	05	1000.000	0.1172	06	2000.000	0.1324	07	3000.000	0.1345
08	5000.000	0.1381	09	7000.000	0.1448	10	10000.000	0.1471			

2-Fluorobiphenyl

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.447	02	100.000	1.424	03	200.000	1.515	04	500.000	1.484
05	1000.000	1.513	06	2000.000	1.557	07	3000.000	1.544	08	5000.000	1.546
09	7000.000	1.526	10	10000.000	1.555						

Nitrobenzene-d5

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.282	02	100.000	1.249	03	200.000	1.23	04	500.000	1.311
05	1000.000	1.351	06	2000.000	1.42	07	3000.000	1.424	08	5000.000	1.436
09	7000.000	1.44	10	10000.000	1.466						

Phenol-d6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	1.46	02	100.000	1.435	03	200.000	1.569	04	500.000	1.557
05	1000.000	1.617	06	2000.000	1.659	07	3000.000	1.658	08	5000.000	1.675
09	7000.000	1.675	10	10000.000	1.7						

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9129	02	100.000	0.8792	03	200.000	0.9298	04	500.000	0.9017
05	1000.000	0.8251	06	2000.000	0.866	07	3000.000	0.854	08	5000.000	0.8188
09	7000.000	0.8877	10	10000.000	0.8579						

Client: V g' sñl Dmùtqñl dñs kRdqùbdr Hñb-
Project: I dñr dmRgùx' ç Rdçh dñs

Service Request: J 07/ 0335
Calibration Date: 1.16.1/ 07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: J B07/ / / 74
Instrument ID: J ,L R, 18

Signal ID: 0

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
1,2,4-Trichlorobenzene	TRG	Average RF	% RSD	2.8	≤20	0.2927	0.010
1,2-Dichlorobenzene	TRG	Average RF	% RSD	2.4	≤20	1.42	0.010
1,4-Dichlorobenzene	TRG	Average RF	% RSD	3.0	≤20	1.51	0.010
2,4-Dimethylphenol	TRG	Average RF	% RSD	6.7	≤20	0.2778	0.100
2-Methylnaphthalene	TRG	Average RF	% RSD	4.9	≤20	0.5351	0.300
2-Methylphenol	TRG	Average RF	% RSD	4.0	≤20	1.079	0.500
4-Methylphenol	TRG	Average RF	% RSD	6.2	≤20	1.511	0.600
Acenaphthene	TRG	Average RF	% RSD	3.8	≤20	1.165	0.700
Acenaphthylene	TRG	Average RF	% RSD	9.2	≤20	1.879	0.900
Anthracene	TRG	Average RF	% RSD	8.1	≤20	1.02	0.600
Benz(a)anthracene	TRG	Average RF	% RSD	6.5	≤20	1.129	0.600
Benzo(a)pyrene	TRG	Average RF	% RSD	6.4	≤20	0.9583	0.600
Benzo(b)fluoranthene	TRG	Average RF	% RSD	8.6	≤20	1.056	0.600
Benzo(g,h,i)perylene	TRG	Quadratic	COD	0.9994	≥0.990	0.8786	0.500
Benzo(k)fluoranthene	TRG	Average RF	% RSD	9.0	≤20	1.069	0.600
Benzoic Acid	TRG	Quadratic	COD	0.9996	≥0.990	0.1022	0.010
Benzyl Alcohol	TRG	Average RF	% RSD	7.3	≤20	0.8457	0.010
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	14.2	≤20	0.7605	0.010
Butyl Benzyl Phthalate	TRG	Quadratic	COD	0.9981	≥0.990	0.4519	0.010
Chrysene	TRG	Average RF	% RSD	2.9	≤20	1.081	0.600
Dibenz(a,h)anthracene	TRG	Average RF	% RSD	4.7	≤20	0.9991	0.400
Dibenzofuran	TRG	Average RF	% RSD	4.6	≤20	1.631	0.800
Diethyl Phthalate	TRG	Average RF	% RSD	5.4	≤20	1.307	0.010
Dimethyl Phthalate	TRG	Average RF	% RSD	5.0	≤20	1.339	0.010
Di-n-butyl Phthalate	TRG	Average RF	% RSD	9.9	≤20	1.092	0.010
Di-n-octyl Phthalate	TRG	Quadratic	COD	0.9991	≥0.990	0.9865	0.010
Fluoranthene	TRG	Average RF	% RSD	4.7	≤20	1.061	0.600
Fluorene	TRG	Average RF	% RSD	6.5	≤20	1.307	0.800
Hexachlorobenzene	TRG	Average RF	% RSD	2.8	≤20	0.2868	0.100
Hexachlorobutadiene	TRG	Average RF	% RSD	3.6	≤20	0.1687	0.010
Hexachloroethane	TRG	Average RF	% RSD	4.2	≤20	0.538	0.300
Indeno(1,2,3-cd)pyrene	TRG	Average RF	% RSD	8.0	≤20	0.9425	0.500
Naphthalene	TRG	Average RF	% RSD	2.7	≤20	0.9866	0.700
N-Nitrosodiphenylamine	TRG	Average RF	% RSD	5.7	≤20	0.8682	0.010

Client: V g' sñl Dmùtñmì dñs kRdqùbdr Hñb-
Project: I dñr dmRgñx' ç Rdçh dñs

Service Request: J07/0335
Calibration Date: 1.16.1/07

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: JB07///74
Instrument ID: J,L R,18

Signal ID: 0

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Pentachlorophenol (PCP)	TRG	Quadratic	COD	0.9999	≥0.990	0.121	0.050
Phenanthrene	TRG	Average RF	% RSD	3.2	≤20	1.07	0.600
Phenol	TRG	Average RF	% RSD	4.6	≤20	1.632	0.800
Pyrene	TRG	Average RF	% RSD	5.7	≤20	1.333	0.600
2,4,6-Tribromophenol	SURR	Average RF	% RSD	11.7	≤20	0.1312	0.010
2-Fluorobiphenyl	SURR	Average RF	% RSD	3.0	≤20	1.511	0.010
Nitrobenzene-d5	SURR	Average RF	% RSD	6.4	≤20	1.361	0.010
Phenol-d6	SURR	Average RF	% RSD	5.8	≤20	1.6	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.1	≤20	0.8733	0.010

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800085-11	SVO_LL ICV @ 3.0ug/mL SVM57-77C	J:\MS29\DATA\022718\0227F013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
1,2,4-Trichlorobenzene	3000	3000	2.927E-1	2.927E-1	-0.010	±30	Average RF
1,2-Dichlorobenzene	3000	3010	1.42E0	1.424E0	0.252	±30	Average RF
1,4-Dichlorobenzene	3000	3000	1.51E0	1.508E0	-0.113	±30	Average RF
2,4-Dimethylphenol	3000	3260	2.778E-1	3.023E-1	8.82	±30	Average RF
2-Methylnaphthalene	3000	3440	5.351E-1	6.128E-1	14.52	±30	Average RF
2-Methylphenol	3000	3270	1.079E0	1.176E0	9.05	±30	Average RF
4-Methylphenol	3000	3400	1.511E0	1.71E0	13.18	±30	Average RF
Acenaphthene	3000	3150	1.165E0	1.223E0	4.93	±30	Average RF
Acenaphthylene	3000	2870	1.879E0	1.8E0	-4.194	±30	Average RF
Anthracene	3000	3280	1.02E0	1.115E0	9.32	±30	Average RF
Benz(a)anthracene	3000	3250	1.129E0	1.225E0	8.50	±30	Average RF
Benzo(a)pyrene	3000	3280	9.583E-1	1.049E0	9.49	±30	Average RF
Benzo(b)fluoranthene	3000	3020	1.056E0	1.064E0	0.779	±30	Average RF
Benzo(g,h,i)perylene	3000	2880	8.786E-1	7.547E-1	-4.162	±30	Quadratic
Benzo(k)fluoranthene	3000	3210	1.069E0	1.145E0	7.07	±30	Average RF
Benzoic Acid	3000	3390	1.022E-1	1.264E-1	12.98	±30	Quadratic
Benzyl Alcohol	3000	3370	8.457E-1	9.513E-1	12.49	±30	Average RF
Bis(2-ethylhexyl) Phthalate	3000	3350	7.605E-1	8.486E-1	11.58	±30	Average RF
Butyl Benzyl Phthalate	3000	3180	4.519E-1	5.247E-1	5.85	±30	Quadratic
Chrysene	3000	3070	1.081E0	1.105E0	2.24	±30	Average RF
Dibenz(a,h)anthracene	3000	2940	9.991E-1	9.791E-1	-2.001	±30	Average RF
Dibenzofuran	3000	3420	1.631E0	1.86E0	14.07	±30	Average RF
Diethyl Phthalate	3000	3120	1.307E0	1.361E0	4.11	±30	Average RF
Dimethyl Phthalate	3000	3050	1.339E0	1.362E0	1.73	±30	Average RF
Di-n-butyl Phthalate	3000	3210	1.092E0	1.168E0	7.02	±30	Average RF
Di-n-octyl Phthalate	3000	3030	9.865E-1	1.114E0	0.971	±30	Quadratic
Fluoranthene	3000	3130	1.061E0	1.105E0	4.18	±30	Average RF
Fluorene	3000	3150	1.307E0	1.37E0	4.87	±30	Average RF
Hexachlorobenzene	3000	3020	2.868E-1	2.882E-1	0.511	±30	Average RF
Hexachlorobutadiene	3000	2930	1.687E-1	1.649E-1	-2.268	±30	Average RF
Hexachloroethane	3000	3070	5.38E-1	5.51E-1	2.42	±30	Average RF
Indeno(1,2,3-cd)pyrene	3000	2710	9.425E-1	8.509E-1	-9.721	±30	Average RF
Naphthalene	3000	3060	9.866E-1	1.005E0	1.85	±30	Average RF
N-Nitrosodiphenylamine	3000	3090	8.682E-1	8.947E-1	3.06	±30	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085
Instrument ID: K-MS-29

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800085-11	SVO_LL ICV @ 3.0ug/mL SVM57-77C	J:\MS29\DATA\022718\0227F013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Pentachlorophenol (PCP)	3000	3610	1.21E-1	1.561E-1	20.49	±30	Quadratic
Phenanthrene	3000	3090	1.07E0	1.102E0	2.96	±30	Average RF
Phenol	3000	3280	1.632E0	1.787E0	9.49	±30	Average RF
Pyrene	3000	3070	1.333E0	1.364E0	2.35	±30	Average RF
2,4,6-Tribromophenol	3000	3720	1.312E-1	1.626E-1	23.98	±30	Average RF
2-Fluorobiphenyl	3000	3610	1.511E0	1.821E0	20.48	±30	Average RF
Nitrobenzene-d5	3000	3660	1.361E0	1.66E0	21.98	±30	Average RF
Phenol-d6	3000	3560	1.6E0	1.9E0	18.68	±30	Average RF
p-Terphenyl-d14	3000	3770	8.733E-1	1.096E0	25.51	±30	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 01:50

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\030718\0307F034.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800085
Analysis Lot: 582804
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
1,2,4-Trichlorobenzene	3000	3000	0.2927	0.2926	0.0	NA	±20	Average RF
1,2-Dichlorobenzene	3000	3020	1.4202	1.4301	0.7	NA	±20	Average RF
1,4-Dichlorobenzene	3000	3020	1.5097	1.5212	0.8	NA	±20	Average RF
2,4-Dimethylphenol	3000	3140	0.2778	0.291	4.8	NA	±20	Average RF
2-Methylnaphthalene	3000	3040	0.5351	0.5416	1.2	NA	±20	Average RF
2-Methylphenol	3000	2980	1.0789	1.0723	-0.6	NA	±20	Average RF
4-Methylphenol	3000	3010	1.5111	1.5153	0.3	NA	±20	Average RF
Acenaphthene	3000	3060	1.1652	1.1887	2.0	NA	±20	Average RF
Acenaphthylene	3000	3220	1.8789	2.0188	7.4	NA	±20	Average RF
Anthracene	3000	3310	1.0204	1.1245	10.2	NA	±20	Average RF
Benz(a)anthracene	3000	2920	1.129	1.1004	-2.5	NA	±20	Average RF
Benzo(a)pyrene	3000	3170	0.9583	1.014	5.8	NA	±20	Average RF
Benzo(b)fluoranthene	3000	3050	1.0559	1.0733	1.6	NA	±20	Average RF
Benzo(g,h,i)perylene	3000	3640	0.8786	0.9539	NA	21.2*	±20	Quadratic
Benzo(k)fluoranthene	3000	3370	1.0691	1.2002	12.3	NA	±20	Average RF
Benzoic Acid	3000	3510	0.1022	0.1317	NA	16.8	±20	Quadratic
Benzyl Alcohol	3000	3040	0.8457	0.8563	1.3	NA	±20	Average RF
Bis(2-ethylhexyl) Phthalate	3000	2860	0.7605	0.7263	-4.5	NA	±20	Average RF
Butyl Benzyl Phthalate	3000	2950	0.4519	0.4856	NA	-1.5	±20	Quadratic
Chrysene	3000	3090	1.0809	1.1137	3.0	NA	±20	Average RF
Dibenz(a,h)anthracene	3000	3150	0.9991	1.0507	5.2	NA	±20	Average RF
Dibenzofuran	3000	3070	1.6308	1.6695	2.4	NA	±20	Average RF
Diethyl Phthalate	3000	3180	1.3072	1.3858	6.0	NA	±20	Average RF
Dimethyl Phthalate	3000	3080	1.3388	1.3761	2.8	NA	±20	Average RF
Di-n-butyl Phthalate	3000	3430	1.0915	1.248	14.3	NA	±20	Average RF
Di-n-octyl Phthalate	3000	3190	0.9865	1.1798	NA	6.3	±20	Quadratic
Fluoranthene	3000	3530	1.061	1.2489	17.7	NA	±20	Average RF
Fluorene	3000	3180	1.3067	1.3834	5.9	NA	±20	Average RF
Hexachlorobenzene	3000	2940	0.2868	0.2812	-1.9	NA	±20	Average RF
Hexachlorobutadiene	3000	2990	0.1687	0.1682	-0.3	NA	±20	Average RF
Hexachloroethane	3000	3110	0.538	0.5574	3.6	NA	±20	Average RF
Indeno(1,2,3-cd)pyrene	3000	2990	0.9425	0.9395	-0.3	NA	±20	Average RF
Naphthalene	3000	3020	0.9866	0.9946	0.8	NA	±20	Average RF
N-Nitrosodiphenylamine	3000	3180	0.8682	0.9212	6.1	NA	±20	Average RF
Pentachlorophenol (PCP)	3000	2870	0.121	0.1203	NA	-4.3	±20	Quadratic
Phenanthrene	3000	3090	1.0702	1.1011	2.9	NA	±20	Average RF
Phenol	3000	2990	1.6324	1.6264	-0.4	NA	±20	Average RF
Pyrene	3000	2750	1.3326	1.2212	-8.4	NA	±20	Average RF
2,4,6-Tribromophenol	3000	3090	0.1312	0.1351	3.0	NA	±20	Average RF
2-Fluorobiphenyl	3000	3020	1.5111	1.5221	0.7	NA	±20	Average RF
Nitrobenzene-d5	3000	3110	1.3608	1.4092	3.6	NA	±20	Average RF
Phenol-d6	3000	3050	1.6005	1.6262	1.6	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/18 01:50

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\030718\0307F034.D\
Signal ID: 1

Calibration Date: 2/27/2018
Calibration ID: KC1800085
Analysis Lot: 582804
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	2910	0.8733	0.8474	-3.0	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request:K1801446

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot:582804
Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\030718\0307F033.D\	ZZZZZZZ	ZZZZZZZ	3/8/2018	01:22:00	
J:\MS29\DATA\030718\0307F034.D\	Continuing Calibration Verification	KQ1803253-02	3/8/2018	01:50:00	
J:\MS29\DATA\030718\0307F035.D\	Method Blank	KQ1802442-04	3/8/2018	02:19:00	
J:\MS29\DATA\030718\0307F036.D\	Lab Control Sample	KQ1802442-03	3/8/2018	02:47:00	
J:\MS29\DATA\030718\0307F037.D\	SED-6 MS	KQ1802442-01	3/8/2018	03:16:00	
J:\MS29\DATA\030718\0307F038.D\	SED-6 DMS	KQ1802442-02	3/8/2018	03:45:00	
J:\MS29\DATA\030718\0307F039.D\	SED-6	K1801446-006	3/8/2018	04:13:00	
J:\MS29\DATA\030718\0307F040.D\	SED-1	K1801446-001	3/8/2018	04:42:00	
J:\MS29\DATA\030718\0307F041.D\	SED-2	K1801446-002	3/8/2018	05:10:00	
J:\MS29\DATA\030718\0307F042.D\	SED-3	K1801446-003	3/8/2018	05:39:00	
J:\MS29\DATA\030718\0307F043.D\	SED-4	K1801446-004	3/8/2018	06:08:00	
J:\MS29\DATA\030718\0307F044.D\	SED-5	K1801446-005	3/8/2018	06:36:00	
J:\MS29\DATA\030718\0307F045.D\	SED-7	K1801446-007	3/8/2018	07:05:00	
J:\MS29\DATA\030718\0307F046.D\	SED-8	K1801446-008	3/8/2018	07:33:00	
J:\MS29\DATA\030718\0307F047.D\	SED-9	K1801446-009	3/8/2018	08:02:00	
J:\MS29\DATA\030718\0307F048.D\	SED-10	K1801446-010	3/8/2018	08:30:00	
J:\MS29\DATA\030718\0307F049.D\	SED-11	K1801446-011	3/8/2018	08:59:00	
J:\MS29\DATA\030718\0307F050.D\	SED-12	K1801446-012	3/8/2018	09:28:00	
J:\MS29\DATA\030718\0307F051.D\	SED-13	K1801446-013	3/8/2018	09:56:00	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request:K1801446

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541
Analytical Method: 8270D

Extraction Lot: 308941
Extraction Date: 02/26/18 09:46

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
SED-1	K1801446-001	2/12/18	2/14/18	40.238 g	2 mL	47.3
SED-2	K1801446-002	2/12/18	2/14/18	40.210 g	2 mL	56.3
SED-3	K1801446-003	2/12/18	2/14/18	40.251 g	2 mL	42.1
SED-4	K1801446-004	2/12/18	2/14/18	40.188 g	2 mL	48.5
SED-5	K1801446-005	2/12/18	2/14/18	40.482 g	2 mL	37.5
SED-6	K1801446-006	2/12/18	2/14/18	40.182 g	2 mL	37.4
SED-7	K1801446-007	2/12/18	2/14/18	40.246 g	2 mL	66.0
SED-8	K1801446-008	2/12/18	2/14/18	40.335 g	2 mL	48.7
SED-9	K1801446-009	2/12/18	2/14/18	40.478 g	2 mL	37.5
SED-10	K1801446-010	2/12/18	2/14/18	40.470 g	2 mL	71.8
SED-11	K1801446-011	2/12/18	2/14/18	40.308 g	2 mL	52.9
SED-12	K1801446-012	2/12/18	2/14/18	40.341 g	2 mL	64.0
SED-13	K1801446-013	2/12/18	2/14/18	40.284 g	2 mL	75.6
Matrix Spike	KQ1802442-01MS	2/12/18	2/14/18	40.176 g	2 mL	37.4
Duplicate Matrix Spike	KQ1802442-02DMS	2/12/18	2/14/18	40.180 g	2 mL	37.4
Lab Control Sample	KQ1802442-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1802442-04MB	NA	NA	40.4820 g	2 mL	

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

**Cover Page - Organic Analysis Data Package
 Polychlorinated Biphenyls (PCBs)**

Sample Name	Lab Code	Date Collected	Date Received
SED-1	K1801446-001	02/12/2018	02/14/2018
SED-2	K1801446-002	02/12/2018	02/14/2018
SED-3	K1801446-003	02/12/2018	02/14/2018
SED-4	K1801446-004	02/12/2018	02/14/2018
SED-5	K1801446-005	02/12/2018	02/14/2018
SED-6	K1801446-006	02/12/2018	02/14/2018
SED-7	K1801446-007	02/12/2018	02/14/2018
SED-8	K1801446-008	02/12/2018	02/14/2018
SED-9	K1801446-009	02/12/2018	02/14/2018
SED-10	K1801446-010	02/12/2018	02/14/2018
SED-11	K1801446-011	02/12/2018	02/14/2018
SED-12	K1801446-012	02/12/2018	02/14/2018
SED-13	K1801446-013	02/12/2018	02/14/2018
SED-6MS	KWG1801138-1	02/12/2018	02/14/2018
SED-6DMS	KWG1801138-2	02/12/2018	02/14/2018

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-1
Lab Code: K1801446-001
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	19	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	38	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	19	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	19	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	19	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	17	JP	19	5.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	ND	U	19	5.5	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	75	70-130	03/05/18	Acceptable

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-2
Lab Code: K1801446-002
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	32	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	73	70-130	03/05/18	Acceptable

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-3
Lab Code: K1801446-003
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	45	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	26		23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	8.6	JP	23	6.5	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-4
Lab Code: K1801446-004
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	18	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	35	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	18	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	18	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	18	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	6.9	JP	18	5.1	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	ND	U	18	5.1	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	76	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-5
Lab Code: K1801446-005
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	45	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	30		23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	25		23	6.5	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-6
Lab Code: K1801446-006
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	24	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	48	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	24	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	24	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	24	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	17	J	24	7.0	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	10	J	24	7.0	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	70	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-7
Lab Code: K1801446-007
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	27	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	16	P	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	7.0	J	14	3.9	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	64	70-130	03/05/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-8
Lab Code: K1801446-008
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	17	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	34	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	17	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	17	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	17	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	85		17	4.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	62		17	4.9	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	75	70-130	03/05/18	Acceptable

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-9
Lab Code: K1801446-009
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	45	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	77		23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	130		23	6.5	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	45		23	6.5	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	81	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/22/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-10
Lab Code: K1801446-010
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ugKg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	12	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1221	ND	U	24	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1232	ND	U	12	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1242	200	P	12	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1248	ND	U	12	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1254	320		12	3.5	1	02/26/18	0305/18	KWG1801138	
Aroclor 1260	130		12	3.5	1	02/26/18	0305/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	84	70-130	0305/18	Acceptable

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-11
Lab Code: K1801446-011
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	32	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	36	P	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	160		16	4.6	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	38		16	4.6	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	96	70-130	03/05/18	Acceptable

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-12
Lab Code: K1801446-012
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1221	ND	U	27	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1232	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1242	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1248	ND	U	14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1254	28		14	3.9	1	02/26/18	03/05/18	KWG1801138	
Aroclor 1260	7.3	J	14	3.9	1	02/26/18	03/05/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	70	70-130	03/05/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-13
Lab Code: K1801446-013
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	56	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1221	ND	U	120	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1232	ND	U	56	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1242	220	PD	56	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1248	ND	U	56	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1254	650	D	56	17	5	02/26/18	03/06/18	KWG1801138	
Aroclor 1260	310	D	56	17	5	02/26/18	03/06/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	119	70-130	03/06/18	Acceptable

Comments: _____

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1801138-4
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1221	ND	U	17	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1232	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1242	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1248	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1254	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	
Aroclor 1260	ND	U	10	2.9	1	02/26/18	03/02/18	KWG1801138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	71	70-130	03/02/18	Acceptable

Comments: _____

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446

**Surrogate Recovery Summary
 Polychlorinated Biphenyls (PCBs)**

Extraction Method: EPA 3546
Analysis Method: 8082A

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
SED-1	K1801446-001	75
SED-2	K1801446-002	73
SED-3	K1801446-003	84
SED-4	K1801446-004	76
SED-5	K1801446-005	84
SED-6	K1801446-006	70
SED-7	K1801446-007	64 *
SED-8	K1801446-008	75
SED-9	K1801446-009	81
SED-10	K1801446-010	84
SED-11	K1801446-011	96
SED-12	K1801446-012	70
SED-13	K1801446-013	119 D
Method Blank	KWG1801138-4	71
SED-6MS	KWG1801138-1	69 *
SED-6DMS	KWG1801138-2	72
Lab Control Sample	KWG1801138-3	69 *

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/02/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: SED-6
Lab Code: K1801446-006
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801138

Analyte Name	Sample Result	SED-6MS KWG1801138-1 Matrix Spike			SED-6DMS KWG1801138-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Aroclor 1016	ND	246	243	101	234	243	97	70-130	5	40
Aroclor 1260	10	241	243	95	240	243	95	70-130	0	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/02/2018

Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801138

Lab Control Sample
 KWG1801138-3
 Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Aroclor 1016	93.0	100	93	70-130
Aroclor 1260	91.2	100	91	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/02/2018
Time Analyzed: 22:52

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank **Instrument ID:** GC32.i
Lab Code: KWG1801138-4 **File ID:** J:\GC32\DATA\030118.B\0301F065.D
Extraction Method: EPA 3546 **Level:** Low
Analysis Method: 8082A **Extraction Lot:** KWG1801138

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
SED-6MS	KWG1801138-1	J:\GC32\DATA\030118.B\0301F062.D	03/02/18	21:16
SED-6DMS	KWG1801138-2	J:\GC32\DATA\030118.B\0301F063.D	03/02/18	21:48
Lab Control Sample	KWG1801138-3	J:\GC32\DATA\030118.B\0301F064.D	03/02/18	22:20
SED-1	K1801446-001	J:\GC32\DATA\030518.B\0305F003.D	03/05/18	15:02
SED-2	K1801446-002	J:\GC32\DATA\030518.B\0305F004.D	03/05/18	15:34
SED-3	K1801446-003	J:\GC32\DATA\030518.B\0305F005.D	03/05/18	16:06
SED-4	K1801446-004	J:\GC32\DATA\030518.B\0305F006.D	03/05/18	16:37
SED-5	K1801446-005	J:\GC32\DATA\030518.B\0305F007.D	03/05/18	17:09
SED-6	K1801446-006	J:\GC32\DATA\030518.B\0305F008.D	03/05/18	17:41
SED-7	K1801446-007	J:\GC32\DATA\030518.B\0305F009.D	03/05/18	18:12
SED-8	K1801446-008	J:\GC32\DATA\030518.B\0305F010.D	03/05/18	18:44
SED-9	K1801446-009	J:\GC32\DATA\030518.B\0305F011.D	03/05/18	19:16
SED-10	K1801446-010	J:\GC32\DATA\030518.B\0305F012.D	03/05/18	19:48
SED-11	K1801446-011	J:\GC32\DATA\030518.B\0305F015.D	03/05/18	21:23
SED-12	K1801446-012	J:\GC32\DATA\030518.B\0305F016.D	03/05/18	21:55
SED-13	K1801446-013	J:\GC32\DATA\030518.B\0305F046.D	03/06/18	13:45

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/02/2018
Time Analyzed: 22:20

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG1801138-3
Instrument ID: GC32.i
File ID: J:\GC32\DATA\030118.B\0301F064.D
Extraction Method: EPA 3546
Analysis Method: 8082A
Level: Low
Extraction Lot: KWG1801138

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
SED-6MS	KWG1801138-1	J:\GC32\DATA\030118.B\0301F062.D	03/02/18	21:16
SED-6DMS	KWG1801138-2	J:\GC32\DATA\030118.B\0301F063.D	03/02/18	21:48
Method Blank	KWG1801138-4	J:\GC32\DATA\030118.B\0301F065.D	03/02/18	22:52
SED-1	K1801446-001	J:\GC32\DATA\030518.B\0305F003.D	03/05/18	15:02
SED-2	K1801446-002	J:\GC32\DATA\030518.B\0305F004.D	03/05/18	15:34
SED-3	K1801446-003	J:\GC32\DATA\030518.B\0305F005.D	03/05/18	16:06
SED-4	K1801446-004	J:\GC32\DATA\030518.B\0305F006.D	03/05/18	16:37
SED-5	K1801446-005	J:\GC32\DATA\030518.B\0305F007.D	03/05/18	17:09
SED-6	K1801446-006	J:\GC32\DATA\030518.B\0305F008.D	03/05/18	17:41
SED-7	K1801446-007	J:\GC32\DATA\030518.B\0305F009.D	03/05/18	18:12
SED-8	K1801446-008	J:\GC32\DATA\030518.B\0305F010.D	03/05/18	18:44
SED-9	K1801446-009	J:\GC32\DATA\030518.B\0305F011.D	03/05/18	19:16
SED-10	K1801446-010	J:\GC32\DATA\030518.B\0305F012.D	03/05/18	19:48
SED-11	K1801446-011	J:\GC32\DATA\030518.B\0305F015.D	03/05/18	21:23
SED-12	K1801446-012	J:\GC32\DATA\030518.B\0305F016.D	03/05/18	21:55
SED-13	K1801446-013	J:\GC32\DATA\030518.B\0305F046.D	03/06/18	13:45

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F005.D	S	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F015.D
B	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F006.D	T	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F016.D
C	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F007.D	U	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F017.D
D	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F008.D	V	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F018.D
E	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F009.D	W	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F019.D
F	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F010.D	X	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F020.D
G	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F011.D	Y	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F021.D
H	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F004.D	Z	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F022.D
I	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F005.D	AA	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F023.D
J	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F006.D	AB	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F024.D
K	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F007.D	AC	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F025.D
L	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F008.D	AD	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F026.D
M	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F009.D	AE	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F027.D
N	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F010.D	AF	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F028.D
O	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F011.D	AG	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F029.D
P	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F012.D	AH	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F030.D
Q	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F013.D	AI	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F031.D
R	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F014.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Decachlorobiphenyl	A	0.10	1.22E+6	B	0.20	1.14E+6	C	0.50	1.04E+6	D	1.0	9.96E+5	E	2.0	9.49E+5
	F	5.0	8.76E+5	G	10	8.14E+5									
Aroclor 1016 {1}	A	1.0	23300	B	2.0	26000	C	5.0	24300	D	10	23800	E	20	24100
	F	50	23100	G	100	21100									
Aroclor 1016 {2}	A	1.0	58100	B	2.0	56400	C	5.0	64100	D	10	62200	E	20	56600
	F	50	56700	G	100	52700									
Aroclor 1016 {3}	A	1.0	43300	B	2.0	42000	C	5.0	38700	D	10	41500	E	20	38900
	F	50	36900	G	100	33900									
Aroclor 1016 {4}	A	1.0	36800	B	2.0	32900	C	5.0	33300	D	10	33100	E	20	31600
	F	50	28100	G	100	25900									
Aroclor 1016 {5}	A	1.0	23000	B	2.0	21400	C	5.0	25400	D	10	25800	E	20	25200
	F	50	23800	G	100	21300									
Aroclor 1260 {1}	A	1.0	67400	B	2.0	64000	C	5.0	61800	D	10	60200	E	20	57300
	F	50	52200	G	100	48500									
Aroclor 1260 {2}	A	1.0	38900	B	2.0	41600	C	5.0	35300	D	10	39500	E	20	35500
	F	50	31800	G	100	29500									
Aroclor 1260 {3}	A	1.0	39300	B	2.0	40600	C	5.0	41200	D	10	40400	E	20	39500
	F	50	36200	G	100	34500									

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Aroclor 1260 {4}	A	1.0	99000	B	2.0	96300	C	5.0	84100	D	10	83600	E	20	82200
	F	50	74500	G	100	71200									
Aroclor 1260 {5}	A	1.0	75900	B	2.0	71600	C	5.0	67700	D	10	64900	E	20	62300
	F	50	58200	G	100	54400									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.3		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	6.2		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	6.6		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	8.2		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	11.4		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	8.0		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	11.3		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	12.0		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	6.4		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	12.2		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	11.5		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018
Date Analyzed: 01/24/2018 - 01/31/2018

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration ID: CAL15681
Units: ng/mL

File ID: \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F033.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F035.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F036.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F037.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F040.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F032.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F034.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F038.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F039.D

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	20	21	23700	24800	5	NA	± 100 %	AverageRF
Aroclor 1016 {2}	20	20	58100	58800	1	NA	± 100 %	AverageRF
Aroclor 1016 {3}	20	19	39300	37800	-4	NA	± 100 %	AverageRF
Aroclor 1016 {4}	20	18	31700	28600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {5}	20	20	23700	23500	-1	NA	± 100 %	AverageRF
Aroclor 1016	20	20	NA	NA	NA	-2	± 20 %	NA
Aroclor 1260 {1}	50	50	58800	58600	0	NA	± 100 %	AverageRF
Aroclor 1260 {2}	50	50	36000	36100	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	50	61	38800	47600	23	NA	± 100 %	AverageRF
Aroclor 1260 {4}	50	57	84400	96600	14	NA	± 100 %	AverageRF
Aroclor 1260 {5}	50	57	65000	73800	14	NA	± 100 %	AverageRF
Aroclor 1260	50	55	NA	NA	NA	10	± 20 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F005.D	S	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F015.D
B	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F006.D	T	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F016.D
C	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F007.D	U	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F017.D
D	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F008.D	V	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F018.D
E	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F009.D	W	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F019.D
F	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F010.D	X	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F020.D
G	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F011.D	Y	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F021.D
H	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F004.D	Z	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F022.D
I	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F005.D	AA	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F023.D
J	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F006.D	AB	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F024.D
K	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F007.D	AC	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F025.D
L	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F008.D	AD	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F026.D
M	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F009.D	AE	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F027.D
N	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F010.D	AF	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F028.D
O	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F011.D	AG	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F029.D
P	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F012.D	AH	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F030.D
Q	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F013.D	AI	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F031.D
R	\\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F014.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Decachlorobiphenyl	A	0.10	1.33E+6	B	0.20	1.26E+6	C	0.50	1.13E+6	D	1.0	1.11E+6	E	2.0	1.05E+6
	F	5.0	9.47E+5	G	10	8.71E+5									
Aroclor 1016 {1}	A	1.0	31400	B	2.0	33200	C	5.0	27600	D	10	25900	E	20	24900
	F	50	20300	G	100	19800									
Aroclor 1016 {2}	A	1.0	16900	B	2.0	19800	C	5.0	20800	D	10	20900	E	20	21600
	F	50	20800	G	100	20000									
Aroclor 1016 {3}	A	1.0	49500	B	2.0	49800	C	5.0	49600	D	10	49500	E	20	50000
	F	50	48900	G	100	46600									
Aroclor 1016 {4}	A	1.0	39400	B	2.0	35400	C	5.0	29800	D	10	30700	E	20	30700
	F	50	28900	G	100	27500									
Aroclor 1016 {5}	A	1.0	14500	B	2.0	18100	C	5.0	15600	D	10	17200	E	20	15700
	F	50	15900	G	100	15100									
Aroclor 1260 {1}	A	1.0	20800	B	2.0	27300	C	5.0	19200	D	10	19900	E	20	22900
	F	50	20800	G	100	19400									
Aroclor 1260 {2}	A	1.0	48300	B	2.0	46800	C	5.0	40400	D	10	39800	E	20	40000
	F	50	37500	G	100	35800									
Aroclor 1260 {3}	A	1.0	46500	B	2.0	43000	C	5.0	41300	D	10	39700	E	20	40300
	F	50	37000	G	100	35600									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Aroclor 1260 {4}	A	1.0	94800	B	2.0	94400	C	5.0	87100	D	10	88200	E	20	83700
	F	50	78700	G	100	74600									
Aroclor 1260 {5}	A	1.0	79200	B	2.0	79000	C	5.0	61600	D	10	57600	E	20	57300
	F	50	52000	G	100	49200									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.6		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	19.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	7.7		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	2.4		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	13.1		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	7.8		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	13.4		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	11.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	9.0		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	8.8		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	19.6		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 01/24/2018
Date Analyzed: 01/24/2018 -
 01/31/2018

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration ID: CAL15681
Units: ng/mL

File ID: \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F040.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F032.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F033.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F034.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F035.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F036.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F037.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F038.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F039.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	20	15	26200	20300	-23	NA	± 100 %	AverageRF
Aroclor 1016 {2}	20	21	20100	21100	5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	20	20	49100	48200	-2	NA	± 100 %	AverageRF
Aroclor 1016 {4}	20	18	31800	28500	-10	NA	± 100 %	AverageRF
Aroclor 1016 {5}	20	23	16000	18100	13	NA	± 100 %	AverageRF
Aroclor 1016	20	19	NA	NA	NA	-3	± 20 %	NA
Aroclor 1260 {1}	50	47	21400	20100	-6	NA	± 100 %	AverageRF
Aroclor 1260 {2}	50	62	41200	50900	23	NA	± 100 %	AverageRF
Aroclor 1260 {3}	50	60	40500	48600	20	NA	± 100 %	AverageRF
Aroclor 1260 {4}	50	60	85900	104000	21	NA	± 100 %	AverageRF
Aroclor 1260 {5}	50	54	62300	66800	7	NA	± 100 %	AverageRF
Aroclor 1260	50	57	NA	NA	NA	13	± 20 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/02/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801265
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030118.B\0301F060.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1010000	818000	-19	NA	± 20	AverageRF
Aroclor 1016 {1}	25	30	23700	28300	19	NA	± 100	AverageRF
Aroclor 1016 {2}	25	30	58100	69100	19	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	39300	42400	8	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31700	32500	3	NA	± 100	AverageRF
Aroclor 1016 {5}	25	30	23700	28900	22	NA	± 100	AverageRF
Aroclor 1016	25	29	NA	NA	NA	14	± 20	NA
Aroclor 1260 {1}	25	25	58800	59600	1	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	36000	35400	-2	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	39700	2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	84400	77500	-8	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	65000	57900	-11	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-3	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/02/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801265
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030118_R.B\0301F060.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1100000	899000	-18	NA	± 20	AverageRF
Aroclor 1016 {1}	25	22	26200	23000	-12	NA	± 100	AverageRF
Aroclor 1016 {2}	25	31	20100	25400	26	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	49100	53900	10	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31800	33800	6	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	16000	17400	9	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	8	± 20	NA
Aroclor 1260 {1}	25	26	21400	22700	6	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	41200	41700	1	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	39900	-2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	85900	80300	-7	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	51600	-17	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-4	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/02/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801265
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030118.B\0301F066.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	859000	-15	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25600	8	NA	± 100	AverageRF
Aroclor 1016 {2}	25	30	58100	70500	21	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	39300	42300	8	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31700	34600	9	NA	± 100	AverageRF
Aroclor 1016 {5}	25	32	23700	30200	28	NA	± 100	AverageRF
Aroclor 1016	25	29	NA	NA	NA	15	± 20	NA
Aroclor 1260 {1}	25	26	58800	62200	6	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37800	5	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40200	4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	75400	-11	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	65000	58000	-11	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/02/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801265
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030118_R.B\0301F066.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	929000	-15	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	24100	-8	NA	± 100	AverageRF
Aroclor 1016 {2}	25	33	20100	26600	32	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	49100	55400	13	NA	± 100	AverageRF
Aroclor 1016 {4}	25	28	31800	35000	10	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	16000	17200	8	NA	± 100	AverageRF
Aroclor 1016	25	28	NA	NA	NA	11	± 20	NA
Aroclor 1260 {1}	25	28	21400	24100	12	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	41200	41200	0	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	41100	2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	85900	79400	-8	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	52200	-16	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/05/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518.B\0303F089.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1010000	791000	-21 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	24600	4	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	64400	11	NA	± 100	AverageRF
Aroclor 1016 {3}	25	25	39300	39500	1	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31700	32800	4	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27000	14	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	25	58800	58500	0	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	36000	35500	-1	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	38800	39200	1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	73600	-13	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	55700	-14	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-6	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/05/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518_R.B\0303F089.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	978000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	24100	-8	NA	± 100	AverageRF
Aroclor 1016 {2}	25	33	20100	26900	34	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	49100	54900	12	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31800	34800	9	NA	± 100	AverageRF
Aroclor 1016 {5}	25	28	16000	17900	12	NA	± 100	AverageRF
Aroclor 1016	25	28	NA	NA	NA	12	± 20	NA
Aroclor 1260 {1}	25	28	21400	24300	13	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	43500	6	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	40500	42100	4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82400	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	54300	-13	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/05/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518.B\0305F013.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.8	1010000	732000	-27 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	24400	3	NA	± 100	AverageRF
Aroclor 1016 {2}	25	24	58100	56900	-2	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	40800	4	NA	± 100	AverageRF
Aroclor 1016 {4}	25	23	31700	29600	-7	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27400	16	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	3	± 20	NA
Aroclor 1260 {1}	25	23	58800	54100	-8	NA	± 100	AverageRF
Aroclor 1260 {2}	25	23	36000	33100	-8	NA	± 100	AverageRF
Aroclor 1260 {3}	25	23	38800	35900	-7	NA	± 100	AverageRF
Aroclor 1260 {4}	25	20	84400	66100	-22	NA	± 100	AverageRF
Aroclor 1260 {5}	25	19	65000	50100	-23	NA	± 100	AverageRF
Aroclor 1260	25	22	NA	NA	NA	-14	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/05/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518_R.B\0305F013.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	906000	-18	NA	± 20	AverageRF
Aroclor 1016 {1}	25	20	26200	21300	-19	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	20100	21900	9	NA	± 100	AverageRF
Aroclor 1016 {3}	25	24	49100	47000	-4	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31800	32000	1	NA	± 100	AverageRF
Aroclor 1016 {5}	25	24	16000	15400	-4	NA	± 100	AverageRF
Aroclor 1016	25	24	NA	NA	NA	-4	± 20	NA
Aroclor 1260 {1}	25	26	21400	21900	2	NA	± 100	AverageRF
Aroclor 1260 {2}	25	23	41200	38600	-6	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	40500	39000	-4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	85900	76300	-11	NA	± 100	AverageRF
Aroclor 1260 {5}	25	20	62300	49600	-20	NA	± 100	AverageRF
Aroclor 1260	25	23	NA	NA	NA	-8	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518.B\0305F025.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.9	1010000	754000	-25 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	24600	4	NA	± 100	AverageRF
Aroclor 1016 {2}	25	26	58100	61000	5	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	39300	44000	12	NA	± 100	AverageRF
Aroclor 1016 {4}	25	24	31700	30700	-3	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27200	15	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	6	± 20	NA
Aroclor 1260 {1}	25	25	58800	59000	0	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	36000	35000	-3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	38800	37100	-4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	21	84400	70800	-16	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	53600	-18	NA	± 100	AverageRF
Aroclor 1260	25	23	NA	NA	NA	-8	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518_R.B\0305F025.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	934000	-15	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	23700	-10	NA	± 100	AverageRF
Aroclor 1016 {2}	25	30	20100	23900	19	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	49100	52900	8	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31800	34000	7	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	16000	17000	6	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	6	± 20	NA
Aroclor 1260 {1}	25	31	21400	26200	22	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	43200	5	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	40300	0	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	85900	80000	-7	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	53100	-15	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518.B\0305F037.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.9	1010000	781000	-22 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25300	7	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	58100	68100	17	NA	± 100	AverageRF
Aroclor 1016 {3}	25	25	39300	39700	1	NA	± 100	AverageRF
Aroclor 1016 {4}	25	23	31700	29400	-7	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27300	15	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	26	58800	60200	2	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	36000	36400	1	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	38800	38200	-2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	74000	-12	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	55500	-15	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518_R.B\0305F037.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	975000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	24500	-6	NA	± 100	AverageRF
Aroclor 1016 {2}	25	32	20100	25700	28	NA	± 100	AverageRF
Aroclor 1016 {3}	25	29	49100	56100	14	NA	± 100	AverageRF
Aroclor 1016 {4}	25	28	31800	35700	12	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	16000	17600	10	NA	± 100	AverageRF
Aroclor 1016	25	28	NA	NA	NA	12	± 20	NA
Aroclor 1260 {1}	25	28	21400	23700	10	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	42700	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	40500	42200	4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82700	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	54800	-12	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	0	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518.B\0305F047.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1010000	800000	-21 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25900	9	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	65600	13	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	39300	41900	7	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31700	34400	8	NA	± 100	AverageRF
Aroclor 1016 {5}	25	32	23700	30700	30	NA	± 100	AverageRF
Aroclor 1016	25	28	NA	NA	NA	13	± 20	NA
Aroclor 1260 {1}	25	26	58800	60300	3	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37100	3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	38800	38900	0	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	74200	-12	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	55700	-14	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-4	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/06/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801434
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\030518_R.B\0305F047.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	978000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	23900	-9	NA	± 100	AverageRF
Aroclor 1016 {2}	25	33	20100	26600	32	NA	± 100	AverageRF
Aroclor 1016 {3}	25	29	49100	56600	15	NA	± 100	AverageRF
Aroclor 1016 {4}	25	29	31800	36300	14	NA	± 100	AverageRF
Aroclor 1016 {5}	25	28	16000	17900	12	NA	± 100	AverageRF
Aroclor 1016	25	28	NA	NA	NA	13	± 20	NA
Aroclor 1260 {1}	25	28	21400	23800	11	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	42400	3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	27	40500	44000	9	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	84000	-2	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	54800	-12	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801265
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0228F053.D	Continuing Calibration Verification	KWG1801265-1	3/1/2018	11:23		3/1/2018	11:23
0228F054.D	Instrument Blank	KWG1801265-2	3/1/2018	11:55		3/1/2018	11:55
0301F001.D	ZZZZZZ	ZZZZZZ	3/1/2018	12:52		3/1/2018	12:52
0301F002.D	ZZZZZZ	ZZZZZZ	3/1/2018	13:24		3/1/2018	13:24
0301F003.D	ZZZZZZ	ZZZZZZ	3/1/2018	13:55		3/1/2018	13:55
0301F004.D	ZZZZZZ	ZZZZZZ	3/1/2018	14:27		3/1/2018	14:27
0301F005.D	ZZZZZZ	ZZZZZZ	3/1/2018	14:59		3/1/2018	14:59
0301F006.D	ZZZZZZ	ZZZZZZ	3/1/2018	15:31		3/1/2018	15:31
0301F007.D	ZZZZZZ	ZZZZZZ	3/1/2018	16:03		3/1/2018	16:03
0301F008.D	ZZZZZZ	ZZZZZZ	3/1/2018	16:35		3/1/2018	16:35
0301F009.D	ZZZZZZ	ZZZZZZ	3/1/2018	17:07		3/1/2018	17:07
0301F010.D	ZZZZZZ	ZZZZZZ	3/1/2018	17:39		3/1/2018	17:39
0301F011.D	Continuing Calibration Verification	KWG1801265-3	3/1/2018	18:11		3/1/2018	18:11
0301F012.D	Instrument Blank	KWG1801265-4	3/1/2018	18:43		3/1/2018	18:43
0301F013.D	ZZZZZZ	ZZZZZZ	3/1/2018	19:15		3/1/2018	19:15
0301F014.D	ZZZZZZ	ZZZZZZ	3/1/2018	19:47		3/1/2018	19:47
0301F015.D	ZZZZZZ	ZZZZZZ	3/1/2018	20:18		3/1/2018	20:18
0301F016.D	ZZZZZZ	ZZZZZZ	3/1/2018	20:50		3/1/2018	20:50
0301F017.D	ZZZZZZ	ZZZZZZ	3/1/2018	21:22		3/1/2018	21:22
0301F018.D	ZZZZZZ	ZZZZZZ	3/1/2018	21:54		3/1/2018	21:54
0301F019.D	ZZZZZZ	ZZZZZZ	3/1/2018	22:26		3/1/2018	22:26
0301F020.D	ZZZZZZ	ZZZZZZ	3/1/2018	22:58		3/1/2018	22:58
0301F021.D	ZZZZZZ	ZZZZZZ	3/1/2018	23:30		3/1/2018	23:30
0301F022.D	ZZZZZZ	ZZZZZZ	3/2/2018	00:02		3/2/2018	00:02
0301F023.D	Continuing Calibration Verification	KWG1801265-5	3/2/2018	00:34		3/2/2018	00:34
0301F024.D	Instrument Blank	KWG1801265-6	3/2/2018	01:06		3/2/2018	01:06
0301F025.D	ZZZZZZ	ZZZZZZ	3/2/2018	01:37		3/2/2018	01:37
0301F026.D	ZZZZZZ	ZZZZZZ	3/2/2018	02:09		3/2/2018	02:09
0301F027.D	ZZZZZZ	ZZZZZZ	3/2/2018	02:41		3/2/2018	02:41
0301F028.D	ZZZZZZ	ZZZZZZ	3/2/2018	03:13		3/2/2018	03:13
0301F029.D	ZZZZZZ	ZZZZZZ	3/2/2018	03:45		3/2/2018	03:45
0301F030.D	ZZZZZZ	ZZZZZZ	3/2/2018	04:17		3/2/2018	04:17
0301F031.D	ZZZZZZ	ZZZZZZ	3/2/2018	04:49		3/2/2018	04:49
0301F032.D	ZZZZZZ	ZZZZZZ	3/2/2018	05:20		3/2/2018	05:20

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801265
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0301F033.D	ZZZZZZ	ZZZZZZ	3/2/2018	05:52		3/2/2018	05:52
0301F034.D	ZZZZZZ	ZZZZZZ	3/2/2018	06:24		3/2/2018	06:24
0301F035.D	ZZZZZZ	ZZZZZZ	3/2/2018	06:56		3/2/2018	06:56
0301F036.D	Continuing Calibration Verification	KWG1801265-7	3/2/2018	07:28		3/2/2018	07:28
0301F037.D	Instrument Blank	KWG1801265-8	3/2/2018	08:00		3/2/2018	08:00
0301F060.D	Continuing Calibration Verification	KWG1801265-11	3/2/2018	20:12		3/2/2018	20:12
0301F061.D	Instrument Blank	KWG1801265-12	3/2/2018	20:44		3/2/2018	20:44
0301F062.D	SED-6MS	KWG1801138-1	3/2/2018	21:16		3/2/2018	21:16
0301F063.D	SED-6DMS	KWG1801138-2	3/2/2018	21:48		3/2/2018	21:48
0301F064.D	Lab Control Sample	KWG1801138-3	3/2/2018	22:20		3/2/2018	22:20
0301F065.D	Method Blank	KWG1801138-4	3/2/2018	22:52		3/2/2018	22:52
0301F066.D	Continuing Calibration Verification	KWG1801265-13	3/2/2018	23:24		3/2/2018	23:24
0301F067.D	Instrument Blank	KWG1801265-14	3/2/2018	23:55		3/2/2018	23:55

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801434
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0303F089.D	Continuing Calibration Verification	KWG1801434-1	3/5/2018	13:54		3/5/2018	13:54
0303F090.D	Instrument Blank	KWG1801434-2	3/5/2018	14:26		3/5/2018	14:26
0305F003.D	SED-1	K1801446-001	3/5/2018	15:02		3/5/2018	15:02
0305F004.D	SED-2	K1801446-002	3/5/2018	15:34		3/5/2018	15:34
0305F005.D	SED-3	K1801446-003	3/5/2018	16:06		3/5/2018	16:06
0305F006.D	SED-4	K1801446-004	3/5/2018	16:37		3/5/2018	16:37
0305F007.D	SED-5	K1801446-005	3/5/2018	17:09		3/5/2018	17:09
0305F008.D	SED-6	K1801446-006	3/5/2018	17:41		3/5/2018	17:41
0305F009.D	SED-7	K1801446-007	3/5/2018	18:12		3/5/2018	18:12
0305F010.D	SED-8	K1801446-008	3/5/2018	18:44		3/5/2018	18:44
0305F011.D	SED-9	K1801446-009	3/5/2018	19:16		3/5/2018	19:16
0305F012.D	SED-10	K1801446-010	3/5/2018	19:48		3/5/2018	19:48
0305F013.D	Continuing Calibration Verification	KWG1801434-3	3/5/2018	20:19		3/5/2018	20:19
0305F014.D	Instrument Blank	KWG1801434-4	3/5/2018	20:51		3/5/2018	20:51
0305F015.D	SED-11	K1801446-011	3/5/2018	21:23		3/5/2018	21:23
0305F016.D	SED-12	K1801446-012	3/5/2018	21:55		3/5/2018	21:55
0305F017.D	ZZZZZZ	ZZZZZZ	3/5/2018	22:26		3/5/2018	22:26
0305F018.D	ZZZZZZ	ZZZZZZ	3/5/2018	22:58		3/5/2018	22:58
0305F019.D	ZZZZZZ	ZZZZZZ	3/5/2018	23:30		3/5/2018	23:30
0305F020.D	ZZZZZZ	ZZZZZZ	3/6/2018	00:01		3/6/2018	00:01
0305F021.D	ZZZZZZ	ZZZZZZ	3/6/2018	00:33		3/6/2018	00:33
0305F022.D	ZZZZZZ	ZZZZZZ	3/6/2018	01:05		3/6/2018	01:05
0305F023.D	ZZZZZZ	ZZZZZZ	3/6/2018	01:36		3/6/2018	01:36
0305F024.D	ZZZZZZ	ZZZZZZ	3/6/2018	02:08		3/6/2018	02:08
0305F025.D	Continuing Calibration Verification	KWG1801434-5	3/6/2018	02:40		3/6/2018	02:40
0305F026.D	Instrument Blank	KWG1801434-6	3/6/2018	03:11		3/6/2018	03:11
0305F027.D	ZZZZZZ	ZZZZZZ	3/6/2018	03:43		3/6/2018	03:43
0305F028.D	ZZZZZZ	ZZZZZZ	3/6/2018	04:15		3/6/2018	04:15
0305F029.D	ZZZZZZ	ZZZZZZ	3/6/2018	04:46		3/6/2018	04:46
0305F030.D	ZZZZZZ	ZZZZZZ	3/6/2018	05:18		3/6/2018	05:18
0305F031.D	ZZZZZZ	ZZZZZZ	3/6/2018	05:49		3/6/2018	05:49
0305F032.D	ZZZZZZ	ZZZZZZ	3/6/2018	06:21		3/6/2018	06:21
0305F033.D	ZZZZZZ	ZZZZZZ	3/6/2018	06:53		3/6/2018	06:53
0305F034.D	ZZZZZZ	ZZZZZZ	3/6/2018	07:24		3/6/2018	07:24

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801434
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0305F035.D	ZZZZZZ	ZZZZZZ	3/6/2018	07:56		3/6/2018	07:56
0305F036.D	ZZZZZZ	ZZZZZZ	3/6/2018	08:27		3/6/2018	08:27
0305F037.D	Continuing Calibration Verification	KWG1801434-7	3/6/2018	08:59		3/6/2018	08:59
0305F038.D	Instrument Blank	KWG1801434-8	3/6/2018	09:31		3/6/2018	09:31
0305F039.D	ZZZZZZ	ZZZZZZ	3/6/2018	10:02		3/6/2018	10:02
0305F040.D	ZZZZZZ	ZZZZZZ	3/6/2018	10:34		3/6/2018	10:34
0305F041.D	ZZZZZZ	ZZZZZZ	3/6/2018	11:06		3/6/2018	11:06
0305F042.D	ZZZZZZ	ZZZZZZ	3/6/2018	11:38		3/6/2018	11:38
0305F043.D	ZZZZZZ	ZZZZZZ	3/6/2018	12:09		3/6/2018	12:09
0305F044.D	ZZZZZZ	ZZZZZZ	3/6/2018	12:41		3/6/2018	12:41
0305F045.D	ZZZZZZ	ZZZZZZ	3/6/2018	13:13		3/6/2018	13:13
0305F046.D	SED-13	K1801446-013	3/6/2018	13:45		3/6/2018	13:45
0305F047.D	Continuing Calibration Verification	KWG1801434-9	3/6/2018	14:16		3/6/2018	14:16
0305F048.D	Instrument Blank	KWG1801434-10	3/6/2018	14:48		3/6/2018	14:48

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3546
Analysis Method: 8082A

Extraction Lot: KWG1801138
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED-1	K1801446-001	02/12/18	02/14/18	2.233g	8mL	47.3	
SED-2	K1801446-002	02/12/18	02/14/18	2.288g	8mL	56.3	
SED-3	K1801446-003	02/12/18	02/14/18	2.146g	8mL	42.1	
SED-4	K1801446-004	02/12/18	02/14/18	2.362g	8mL	48.5	
SED-5	K1801446-005	02/12/18	02/14/18	2.382g	8mL	37.5	
SED-6	K1801446-006	02/12/18	02/14/18	2.243g	8mL	37.4	
SED-7	K1801446-007	02/12/18	02/14/18	2.312g	8mL	66	
SED-8	K1801446-008	02/12/18	02/14/18	2.473g	8mL	48.7	
SED-9	K1801446-009	02/12/18	02/14/18	2.412g	8mL	37.5	
SED-10	K1801446-010	02/12/18	02/14/18	2.367g	8mL	71.8	
SED-11	K1801446-011	02/12/18	02/14/18	2.418g	8mL	52.9	
SED-12	K1801446-012	02/12/18	02/14/18	2.342g	8mL	64	
SED-13	K1801446-013	02/12/18	02/14/18	2.378g	8mL	75.6	
Method Blank	KWG1801138-4	NA	NA	2.473g	8mL	NA	
SED-6MS	KWG1801138-1	02/12/18	02/14/18	2.198g	8mL	37.4	
SED-6DMS	KWG1801138-2	02/12/18	02/14/18	2.202g	8mL	37.4	
Lab Control Sample	KWG1801138-3	NA	NA	2.000g	8mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-1
Lab Code: K1801446-001
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	19	5.5	17	37	74.1	JP	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-3
Lab Code: K1801446-003
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	23	6.5	26	31	17.5		1	03/05/18
Aroclor 1260	23	6.5	8.6	13	40.7	JP	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-4
Lab Code: K1801446-004
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	18	5.1	6.9	11	45.8	JP	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-5
Lab Code: K1801446-005
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	23	6.5	30	34	12.5		1	03/05/18
Aroclor 1260	23	6.5	25	28	11.3		1	03/05/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-6
Lab Code: K1801446-006
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	24	7.0	17	22	25.6	J	1	03/05/18
Aroclor 1260	24	7.0	10	10	0.0	J	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-7
Lab Code: K1801446-007
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	14	3.9	16	29	57.8	P	1	03/05/18
Aroclor 1260	14	3.9	7.0	10	35.3	J	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-8
Lab Code: K1801446-008
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	17	4.9	85	110	25.6		1	03/05/18
Aroclor 1260	17	4.9	62	64	3.2		1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-9
Lab Code: K1801446-009
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	23	6.5	77	95	20.9		1	03/05/18
Aroclor 1254	23	6.5	130	140	7.4		1	03/05/18
Aroclor 1260	23	6.5	45	60	28.6		1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-10
Lab Code: K1801446-010
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	12	3.5	200	330	49.1	P	1	03/05/18
Aroclor 1254	12	3.5	320	330	3.1		1	03/05/18
Aroclor 1260	12	3.5	130	130	0.0		1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-11
Lab Code: K1801446-011
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	16	4.6	36	65	57.4	P	1	03/05/18
Aroclor 1254	16	4.6	160	170	6.1		1	03/05/18
Aroclor 1260	16	4.6	38	52	31.1		1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-12
Lab Code: K1801446-012
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1254	14	3.9	28	29	3.5		1	03/05/18
Aroclor 1260	14	3.9	7.3	9.3	24.1	J	1	03/05/18

ALS Group USA, Corp. dba ALS Environmental

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: SED-13
Lab Code: K1801446-013
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	56	17	220	350	45.6	PD	5	03/06/18
Aroclor 1254	56	17	650	680	4.5	D	5	03/06/18
Aroclor 1260	56	17	310	340	9.2	D	5	03/06/18

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:10
Date Received: 02/14/18 10:30

Sample Name: SED-1
Lab Code: K1801446-001

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	3.8	2.1	0.90	1	03/28/18 18:36	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	54	10 - 120	03/28/18 18:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 11:50
Date Received: 02/14/18 10:30

Sample Name: SED-2
Lab Code: K1801446-002

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	1.3 J	1.8	0.76	1	03/28/18 18:54	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	84	10 - 120	03/28/18 18:54	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:45
Date Received: 02/14/18 10:30

Sample Name: SED-3
Lab Code: K1801446-003

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	7.5	2.3	1.1	1	03/28/18 19:13	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	75	10 - 120	03/28/18 19:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:05
Date Received: 02/14/18 10:30

Sample Name: SED-4
Lab Code: K1801446-004

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	3.8	2.0	0.87	1	03/28/18 19:31	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	84	10 - 120	03/28/18 19:31	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:35
Date Received: 02/14/18 10:30

Sample Name: SED-5
Lab Code: K1801446-005

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	25	2.6	1.2	1	03/28/18 19:49	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	82	10 - 120	03/28/18 19:49	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 12:20
Date Received: 02/14/18 10:30

Sample Name: SED-6
Lab Code: K1801446-006

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	10	2.6	1.2	1	03/28/18 20:08	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	74	10 - 120	03/28/18 20:08	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:35
Date Received: 02/14/18 10:30

Sample Name: SED-7
Lab Code: K1801446-007

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	75	1.5	0.65	1	03/28/18 21:03	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	73	10 - 120	03/28/18 21:03	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:40
Date Received: 02/14/18 10:30

Sample Name: SED-8
Lab Code: K1801446-008

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	210	10	4.4	5	03/29/18 08:30	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	63	10 - 120	03/29/18 08:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 13:45
Date Received: 02/14/18 10:30

Sample Name: SED-9
Lab Code: K1801446-009

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	300	26	12	10	03/29/18 08:49	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	60	10 - 120	03/29/18 08:49	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:00
Date Received: 02/14/18 10:30

Sample Name: SED-10
Lab Code: K1801446-010

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	4000	69	30	50	03/29/18 09:07	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	151	10 - 120	03/28/18 22:35	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:10
Date Received: 02/14/18 10:30

Sample Name: SED-11
Lab Code: K1801446-011

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	53	1.9	0.80	1	03/28/18 22:53	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	32	10 - 120	03/28/18 22:53	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:15
Date Received: 02/14/18 10:30

Sample Name: SED-12
Lab Code: K1801446-012

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	9.3	1.5	0.67	1	03/28/18 23:12	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	55	10 - 120	03/28/18 23:12	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18 14:25
Date Received: 02/14/18 10:30

Sample Name: SED-13
Lab Code: K1801446-013

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	4000	65	28	50	03/29/18 09:26	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	66	10 - 120	03/28/18 23:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802453-04

Units: ug/Kg
Basis: Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.0	0.43	1	03/29/18 00:07	2/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	49	10 - 120	03/29/18 00:07	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446

SURROGATE RECOVERY SUMMARY

Butyltins

Analysis Method: ALS SOP
Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin
		10 - 120
SED-1	K1801446-001	54
SED-2	K1801446-002	84
SED-3	K1801446-003	75
SED-4	K1801446-004	84
SED-5	K1801446-005	82
SED-6	K1801446-006	74
SED-7	K1801446-007	73
SED-8	K1801446-008	63
SED-9	K1801446-009	60
SED-10	K1801446-010	151 *
SED-11	K1801446-011	32
SED-12	K1801446-012	55
SED-13	K1801446-013	66
SED-6 MS	KQ1802453-01	68
SED-6 DMS	KQ1802453-02	66
Lab Control Sample	KQ1802453-03	37
Method Blank	KQ1802453-04	49

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/18
Date Received: 02/14/18
Date Analyzed: 03/28/18
Date Extracted: 02/26/18

Duplicate Matrix Spike Summary
Butyltins

Sample Name: SED-6
Lab Code: K1801446-006
Analysis Method: ALS SOP
Prep Method: Method

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1802453-01		Result	Duplicate Matrix Spike KQ1802453-02		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tri-n-butyltin Cation	10	56.2	58.2	79	55.0	58.2	77	10-115	2	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/28/18
Date Extracted: 02/26/18

Lab Control Sample Summary
Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Units: ug/Kg
Basis: Dry
Analysis Lot: 585383

Lab Control Sample
KQ1802453-03

<u>Analyte Name</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>% Rec Limits</u>
Tri-n-butyltin Cation	12.3	22.3	55	10-122

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 00:07
Date Extracted: 02/26/18

Method Blank Summary
Butyltins

Sample Name: Method Blank
Lab Code: KQ1802453-04

Instrument ID: K-GC-26
File ID: J:\GC26\DATA\032818\0328F032.D\

Analysis Method: ALS SOP
Prep Method: Method

Analysis Lot: 585383
Extraction Lot: 308961

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
SED-1	K1801446-001	J:\GC26\DATA\032818\0328F014.D\	03/28/18 18:36
SED-2	K1801446-002	J:\GC26\DATA\032818\0328F015.D\	03/28/18 18:54
SED-3	K1801446-003	J:\GC26\DATA\032818\0328F016.D\	03/28/18 19:13
SED-4	K1801446-004	J:\GC26\DATA\032818\0328F017.D\	03/28/18 19:31
SED-5	K1801446-005	J:\GC26\DATA\032818\0328F018.D\	03/28/18 19:49
SED-6	K1801446-006	J:\GC26\DATA\032818\0328F019.D\	03/28/18 20:08
SED-6	KQ1802453-01	J:\GC26\DATA\032818\0328F020.D\	03/28/18 20:26
SED-6	KQ1802453-02	J:\GC26\DATA\032818\0328F021.D\	03/28/18 20:45
SED-7	K1801446-007	J:\GC26\DATA\032818\0328F022.D\	03/28/18 21:03
SED-10	K1801446-010	J:\GC26\DATA\032818\0328F027.D\	03/28/18 22:35
SED-11	K1801446-011	J:\GC26\DATA\032818\0328F028.D\	03/28/18 22:53
SED-12	K1801446-012	J:\GC26\DATA\032818\0328F029.D\	03/28/18 23:12
SED-13	K1801446-013	J:\GC26\DATA\032818\0328F030.D\	03/28/18 23:30
Lab Control Sample	KQ1802453-03	J:\GC26\DATA\032818\0328F031.D\	03/28/18 23:49
SED-8	K1801446-008	J:\GC26\DATA\032818\0328F051.D\	03/29/18 08:30
SED-9	K1801446-009	J:\GC26\DATA\032818\0328F052.D\	03/29/18 08:49
SED-10	K1801446-010	J:\GC26\DATA\032818\0328F053.D\	03/29/18 09:07
SED-13	K1801446-013	J:\GC26\DATA\032818\0328F054.D\	03/29/18 09:26

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Analyzed: 03/28/18 23:49
Date Extracted: 02/26/18

Lab Control Sample Summary
Butyltins

Sample Name: Lab Control Sample **Instrument ID:** K-GC-26
Lab Code: KQ1802453-03 **File ID:** J:\GC26\DATA\032818\0328F031.D\
Analysis Method: ALS SOP **Analysis Lot:** 585383
Prep Method: Method **Extraction Lot:** 308961

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
SED-1	K1801446-001	J:\GC26\DATA\032818\0328F014.D\	03/28/18 18:36
SED-2	K1801446-002	J:\GC26\DATA\032818\0328F015.D\	03/28/18 18:54
SED-3	K1801446-003	J:\GC26\DATA\032818\0328F016.D\	03/28/18 19:13
SED-4	K1801446-004	J:\GC26\DATA\032818\0328F017.D\	03/28/18 19:31
SED-5	K1801446-005	J:\GC26\DATA\032818\0328F018.D\	03/28/18 19:49
SED-6	K1801446-006	J:\GC26\DATA\032818\0328F019.D\	03/28/18 20:08
SED-6	KQ1802453-01	J:\GC26\DATA\032818\0328F020.D\	03/28/18 20:26
SED-6	KQ1802453-02	J:\GC26\DATA\032818\0328F021.D\	03/28/18 20:45
SED-7	K1801446-007	J:\GC26\DATA\032818\0328F022.D\	03/28/18 21:03
SED-10	K1801446-010	J:\GC26\DATA\032818\0328F027.D\	03/28/18 22:35
SED-11	K1801446-011	J:\GC26\DATA\032818\0328F028.D\	03/28/18 22:53
SED-12	K1801446-012	J:\GC26\DATA\032818\0328F029.D\	03/28/18 23:12
SED-13	K1801446-013	J:\GC26\DATA\032818\0328F030.D\	03/28/18 23:30
Method Blank	KQ1802453-04	J:\GC26\DATA\032818\0328F032.D\	03/29/18 00:07
SED-8	K1801446-008	J:\GC26\DATA\032818\0328F051.D\	03/29/18 08:30
SED-9	K1801446-009	J:\GC26\DATA\032818\0328F052.D\	03/29/18 08:49
SED-10	K1801446-010	J:\GC26\DATA\032818\0328F053.D\	03/29/18 09:07
SED-13	K1801446-013	J:\GC26\DATA\032818\0328F054.D\	03/29/18 09:26

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdch dms
Sample Name: RDC,0
Lab Code: J07/0335, // 0

Service Request: J07/0335
Date Collected: / 1.01.07 019/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 36-2

Butyltins

Analytical Method: @KRNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sklmB' s'm	/-8/	2-7	3-5	08		0	/2.17.07 0725

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dmupm dms kRdqubdr hb-
Project: I dmr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,1
Lab Code: J07/ 0335, / / 1

Service Request: J07/ 0335
Date Collected: / 1.01.07 009/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 45-2

Butyltins

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	/ -65	0-2	0-7	21	1	0	/ 2.17.07 07943

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,2
Lab Code: J07/ 0335, / / 2

Service Request: J07/ 0335
Date Collected: / 1.01.07 0134
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 31-0

Butyltins

Analytical Method: @R RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	0-0	6-4	7-4	01		0	/ 2.17.07 0802

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdc...
Sample Name: RDC,3
Lab Code: J07/0335, // 3

Service Request: J07/0335
Date Collected: / 1.01.07 029 4
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 37-4

Butyltins

Analytical Method: @R RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sk...B' sm	/-76	2-7	3-3	04		0	/ 2.17.07 0820

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdc...
Sample Name: RDC,4
Lab Code: J07/0335, // 4

Service Request: J07/0335
Date Collected: / 1.01.07 0124
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 26-4

Butyltins

Analytical Method: @R RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sldmB' snm	0-1	14	15	3		0	/ 2.17.07 0838

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,5
Lab Code: J07/0335, / / 5

Service Request: J07/0335
Date Collected: / 1.01.07 019/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 26-3

Butyltins

Analytical Method: @KRNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	0-1	0/	00	0/		0	/ 2.17.07 1/97

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdch...
Sample Name: RDC,6
Lab Code: J07/0335, // 6

Service Request: J07/0335
Date Collected: / 1.01.07 024
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 55-

Butyltins

Analytical Method: @R RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sklmB' snm	/-54	64	72	0/		0	/ 2.17.07 109 2

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,7
Lab Code: J07/ 0335, / / 7

Service Request: J07/ 0335
Date Collected: / 1.01.07 0208/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 37-6

Butyltins

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	3-3	10/	1/ /	4		4	/ 2.18.07 / 70/

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdc...
Sample Name: RDC,8
Lab Code: J07/0335, // 8

Service Request: J07/0335
Date Collected: / 1.01.07 0234
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 26-4

Butyltin

Analytical Method: @R RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sk...B' sm	01	2/1	2/1	5		0/	/ 2.18.07 / 738

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,0/
Lab Code: J07/ 0335,/ 0/

Service Request: J07/ 0335
Date Collected: / 1.01.07 039 /
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 60-7

Butyltins

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	2/	3/ /	36/ /	05		4/	/ 2.18.07 / 89 6

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s'nl Dm...
Project: I d...
SRM Matrix: Rdch...
Sample Name: RDC,00
Lab Code: J07/0335,/00

Service Request: J07/0335
Date Collected: /1.01.07 0330/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 41-8

Butyltin

Analytical Method: @KRNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat sklmB' s'm	/-7/	42	61	2/		0	/2.17.07 11942

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,01
Lab Code: J07/ 0335,/ 01

Service Request: J07/ 0335
Date Collected: / 1.01.07 0304
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 53-/

Butyltin

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	/ -56	8-2	01	14		0	/ 2.17.07 1201

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,02
Lab Code: J07/ 0335,/ 02

Service Request: J07/ 0335
Date Collected: / 1.01.07 03914
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 64-5

Butyltin

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	17	3/ /	35/ /	03		4/	/ 2.18.07 / 8915

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,5
Lab Code: JP07/ 1342,/ 0

Service Request: J07/ 0335
Date Collected: / 1.01.07 019/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 26-3

Butyltin

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	0-1	45-1	48-0	4		0	/ 2.17.07 1/ 915

ALS Group USA, Corp.
dba ALS Environmental

Butyltin

Client: V g' s0nl Dm...
Project: I dnr dmRgl0x' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: RDC,5
Lab Code: JP07/ 1342,/ 1

Service Request: J07/ 0335
Date Collected: / 1.01.07 019/
Date Received: 1.03.07

Units: t f .Jf
Basis: Cq
Percent Solids: 26-3

Butyltins

Analytical Method: @KR RNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqmat skdmB' snm	0-1	44-/	44-0	; 0		0	/ 2.17.07 1/ 84

ALS Group USA, Corp.
dba ALS Environmental

Bnmq' smQdrt lq

Client: V g' sbl Dmupm dms kRdqlbdr hb-
Project: I dmdmRglx' q Rdch dms
SRM Matrix: Rdch dms
Sample Name: K' a BnmqkR' l old
Lab Code: JP07/ 1342,/ 2

Service Request: J07/ 0335
Date Collected: M@
Date Received:

Units: t f .Jf
Basis: Cq

Butyltins

Analytical Method: @KRNO
Prep Method: L dsgnc

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Sqm at sklmb' sm	/ -32	01-2	03-8	08		0	/ 2.17.07 1238

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñmì dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdçhì dñs

Service Request: J 07/ 0335
Calibration Date: 2.17.1/ 07

Initial Calibration Summary
Butyltins

Calibration ID: JB07/ / 013
Instrument ID: J,F B,15

Signal ID: QSW0

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800124-01	TINS @ 2PPB OT5-08G	J:\GC26\DATA\032818\0328F004.D	03/28/2018 15:31
02	KC1800124-02	TINS @ 5PPB OT5-08H	J:\GC26\DATA\032818\0328F005.D	03/28/2018 15:50
03	KC1800124-03	TINS @ 10PPB OT5-08I	J:\GC26\DATA\032818\0328F006.D	03/28/2018 16:08
04	KC1800124-04	TINS @ 20PPB OT5-08J	J:\GC26\DATA\032818\0328F007.D	03/28/2018 16:26
05	KC1800124-05	TINS @ 50PPB OT5-09F	J:\GC26\DATA\032818\0328F008.D	03/28/2018 16:45
06	KC1800124-06	TINS @200PPB OT5-08K	J:\GC26\DATA\032818\0328F009.D	03/28/2018 17:04
07	KC1800124-07	TINS @ 500PPB OT5-08L	J:\GC26\DATA\032818\0328F010.D	03/28/2018 17:22

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	3.367E4	02	4.455	4.676E4	03	8.910	4.232E4	04	17.820	4.65E4
05	44.550	4.548E4	06	178.200	5.115E4	07	445.500	5.022E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	4.85E4	02	5.000	3.195E4	03	10.000	3.891E4	04	20.000	3.309E4
05	50.000	3.588E4	06	200.000	4.008E4	07	500.000	4.05E4			

Client: V g' sñl Dmùtñmì dñs kRdçùltdr Hñb-
Project: I dñr dñmRglòx' ç Rdçhì dñs

Service Request: J 07/ 0335
Calibration Date: 2.17.1/ 07

Initial Calibration Summary
Butyltins

Calibration ID: JB07// 013
Instrument ID: J,FB,15

Signal ID: QSW,0

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	13.0	≤20	4.516E4	
Tri-n-propyltin	SURR	Average RF	% RSD	14.5	≤20	3.841E4	

ALS Group USA, Corp.
dba ALS Environmental

P@PB Qdonç

Client: V g' sñl Dmùtñmì dñs kRdqùbdr Hñb-
Project: I dñr dmRglòx' ç Rdçhì dñs

Service Request: J 07/ 0335
Calibration Date: 2.17.1/ 07

Initial Calibration Summary
Butyltins

Calibration ID: JB07/ / 013
Instrument ID: J,FB,15

Signal ID: QSW24

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800124-01	TINS @ 2PPB OT5-08G	J:\GC26\DATA\032818\0328F004.D	03/28/2018 15:31
02	KC1800124-02	TINS @ 5PPB OT5-08H	J:\GC26\DATA\032818\0328F005.D	03/28/2018 15:50
03	KC1800124-03	TINS @ 10PPB OT5-08I	J:\GC26\DATA\032818\0328F006.D	03/28/2018 16:08
04	KC1800124-04	TINS @ 20PPB OT5-08J	J:\GC26\DATA\032818\0328F007.D	03/28/2018 16:26
05	KC1800124-05	TINS @ 50PPB OT5-09F	J:\GC26\DATA\032818\0328F008.D	03/28/2018 16:45
06	KC1800124-06	TINS @200PPB OT5-08K	J:\GC26\DATA\032818\0328F009.D	03/28/2018 17:04
07	KC1800124-07	TINS @ 500PPB OT5-08L	J:\GC26\DATA\032818\0328F010.D	03/28/2018 17:22

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	1.092E5	02	4.455	7.768E4	03	8.910	7.892E4	04	17.820	8.518E4
05	44.550	7.699E4	06	178.200	8.05E4	07	445.500	7.882E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	6.999E4	02	5.000	6.724E4	03	10.000	5.689E4	04	20.000	6.633E4
05	50.000	6.723E4	06	200.000	6.537E4	07	500.000	6.415E4			

Client: V g' sñl Dmùtñmì dñs kRdçùltdr Hñb-
Project: I dñr dñmRglòx' ç Rdçhì dñs

Service Request: J07/0335
Calibration Date: 2.17.1/07

Initial Calibration Summary
Butyltins

Calibration ID: JB07//013
Instrument ID: J,FB,15

Signal ID: QSW24

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	13.7	≤20	8.39E4	
Tri-n-propyltin	SURR	Average RF	% RSD	6.3	≤20	6.531E4	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 3/28/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-1

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800124-08	TINS @ 500PPB OT5-09C	J:\GC26\DATA\032818\0328F011.D	03/28/2018 17:41

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	50.6	4.516E4	5.13E4	13.60	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 3/28/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800124
Instrument ID: K-GC-26

Signal ID: RTX-35

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800124-08	TINS @ 500PPB OT5-09C	J:\GC26\DATA\032818\0328F011.D	03/28/2018 17:41

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.4	8.39E4	8.369E4	-0.260	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/28/18 17:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F012.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.4	8.39E4	7.796E4	-7.1	NA	±25	Average RF
Tri-n-propyltin	50.0	47.6	6.531E4	6.213E4	-4.9	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/28/18 17:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F012.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.8	4.516E4	4.647E4	2.9	NA	±25	Average RF
Tri-n-propyltin	50.0	51.6	3.841E4	3.964E4	3.2	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/28/18 21:40

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F024.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	43.7	8.39E4	8.225E4	-2.0	NA	±25	Average RF
Tri-n-propyltin	50.0	48.3	6.531E4	6.315E4	-3.3	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/28/18 21:40

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F024.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.6	4.516E4	4.52E4	0.1	NA	±25	Average RF
Tri-n-propyltin	50.0	47.2	3.841E4	3.623E4	-5.7	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 00:44

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F034.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	35.1	8.39E4	6.607E4	-21.3	NA	±25	Average RF
Tri-n-propyltin	50.0	40.0	6.531E4	5.229E4	-19.9	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 00:44

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F034.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	39.1	4.516E4	3.963E4	-12.2	NA	±25	Average RF
Tri-n-propyltin	50.0	40.3	3.841E4	3.098E4	-19.4	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 04:24

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F048.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	38.0	8.39E4	7.163E4	-14.6	NA	±25	Average RF
Tri-n-propyltin	50.0	47.4	6.531E4	6.193E4	-5.2	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 04:24

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F048.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.9	4.516E4	4.553E4	0.8	NA	±25	Average RF
Tri-n-propyltin	50.0	44.4	3.841E4	3.415E4	-11.1	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 09:44

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F055.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	38.0	8.39E4	7.154E4	-14.7	NA	±25	Average RF
Tri-n-propyltin	50.0	45.5	6.531E4	5.941E4	-9.0	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/18 09:44

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method: ALS SOP
File ID: J:\GC26\DATA\032818\0328F055.D\
Signal ID: RTX-35

Calibration Date: 3/28/2018
Calibration ID: KC1800124
Analysis Lot: 585383
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	44.5	4.516E4	4.514E4	0.0	NA	±25	Average RF
Tri-n-propyltin	50.0	43.4	3.841E4	3.335E4	-13.2	NA	±25	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request:K1801446

Analysis Run Log
Butyltins

Analysis Method: ALS SOP

Analysis Lot:585383

Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\032818\0328F012.D\	Continuing Calibration Verification	KQ1803999-01	3/28/2018	17:59:00	
J:\GC26\DATA\032818\0328F013.D\	ZZZZZZZ	ZZZZZZZ	3/28/2018	18:18:00	
J:\GC26\DATA\032818\0328F014.D\	SED-1	K1801446-001	3/28/2018	18:36:00	
J:\GC26\DATA\032818\0328F015.D\	SED-2	K1801446-002	3/28/2018	18:54:00	
J:\GC26\DATA\032818\0328F016.D\	SED-3	K1801446-003	3/28/2018	19:13:00	
J:\GC26\DATA\032818\0328F017.D\	SED-4	K1801446-004	3/28/2018	19:31:00	
J:\GC26\DATA\032818\0328F018.D\	SED-5	K1801446-005	3/28/2018	19:49:00	
J:\GC26\DATA\032818\0328F019.D\	SED-6	K1801446-006	3/28/2018	20:08:00	
J:\GC26\DATA\032818\0328F020.D\	SED-6 MS	KQ1802453-01	3/28/2018	20:26:00	
J:\GC26\DATA\032818\0328F021.D\	SED-6 DMS	KQ1802453-02	3/28/2018	20:45:00	
J:\GC26\DATA\032818\0328F022.D\	SED-7	K1801446-007	3/28/2018	21:03:00	
J:\GC26\DATA\032818\0328F023.D\	SED-8	K1801446-008	3/28/2018	21:21:00	
J:\GC26\DATA\032818\0328F024.D\	Continuing Calibration Verification	KQ1803999-02	3/28/2018	21:40:00	
J:\GC26\DATA\032818\0328F025.D\	ZZZZZZZ	ZZZZZZZ	3/28/2018	21:58:00	
J:\GC26\DATA\032818\0328F026.D\	SED-9	K1801446-009	3/28/2018	22:17:00	
J:\GC26\DATA\032818\0328F027.D\	SED-10	K1801446-010	3/28/2018	22:35:00	
J:\GC26\DATA\032818\0328F028.D\	SED-11	K1801446-011	3/28/2018	22:53:00	
J:\GC26\DATA\032818\0328F029.D\	SED-12	K1801446-012	3/28/2018	23:12:00	
J:\GC26\DATA\032818\0328F030.D\	SED-13	K1801446-013	3/28/2018	23:30:00	
J:\GC26\DATA\032818\0328F031.D\	Lab Control Sample	KQ1802453-03	3/28/2018	23:49:00	
J:\GC26\DATA\032818\0328F032.D\	Method Blank	KQ1802453-04	3/29/2018	00:07:00	
J:\GC26\DATA\032818\0328F034.D\	Continuing Calibration Verification	KQ1803999-03	3/29/2018	00:44:00	
J:\GC26\DATA\032818\0328F035.D\	ZZZZZZZ	ZZZZZZZ	3/29/2018	01:02:00	
J:\GC26\DATA\032818\0328F048.D\	Continuing Calibration Verification	KQ1803999-07	3/29/2018	04:24:00	
J:\GC26\DATA\032818\0328F049.D\	ZZZZZZZ	ZZZZZZZ	3/29/2018	04:43:00	
J:\GC26\DATA\032818\0328F051.D\	SED-8	K1801446-008	3/29/2018	08:30:00	
J:\GC26\DATA\032818\0328F052.D\	SED-9	K1801446-009	3/29/2018	08:49:00	
J:\GC26\DATA\032818\0328F053.D\	SED-10	K1801446-010	3/29/2018	09:07:00	
J:\GC26\DATA\032818\0328F054.D\	SED-13	K1801446-013	3/29/2018	09:26:00	
J:\GC26\DATA\032818\0328F055.D\	Continuing Calibration Verification	KQ1803999-08	3/29/2018	09:44:00	
J:\GC26\DATA\032818\0328F056.D\	ZZZZZZZ	ZZZZZZZ	3/29/2018	10:02:00	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request:K1801446

Butyltins

Prep Method: Method
Analytical Method: ALS SOP

Extraction Lot: 308961
Extraction Date: 02/26/18 12:22

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
SED-1	K1801446-001	2/12/18	2/14/18	20.242 g	4 mL	47.3
SED-2	K1801446-002	2/12/18	2/14/18	20.261 g	4 mL	56.3
SED-3	K1801446-003	2/12/18	2/14/18	20.391 g	4 mL	42.1
SED-4	K1801446-004	2/12/18	2/14/18	20.482 g	4 mL	48.5
SED-5	K1801446-005	2/12/18	2/14/18	20.281 g	4 mL	37.5
SED-6	K1801446-006	2/12/18	2/14/18	20.338 g	4 mL	37.4
SED-7	K1801446-007	2/12/18	2/14/18	20.325 g	4 mL	66.0
SED-8	K1801446-008	2/12/18	2/14/18	20.107 g	4 mL	48.7
SED-9	K1801446-009	2/12/18	2/14/18	20.343 g	4 mL	37.5
SED-10	K1801446-010	2/12/18	2/14/18	20.226 g	4 mL	71.8
SED-10	K1801446-010	2/12/18	2/14/18	20.226 g	4 mL	71.8
SED-11	K1801446-011	2/12/18	2/14/18	20.421 g	4 mL	52.9
SED-12	K1801446-012	2/12/18	2/14/18	20.177 g	4 mL	64.0
SED-13	K1801446-013	2/12/18	2/14/18	20.374 g	4 mL	75.6
SED-13	K1801446-013	2/12/18	2/14/18	20.374 g	4 mL	75.6
Matrix Spike	KQ1802453-01MS	2/12/18	2/14/18	20.468 g	4 mL	37.4
Duplicate Matrix Spike	KQ1802453-02DMS	2/12/18	2/14/18	20.450 g	4 mL	37.4
Lab Control Sample	KQ1802453-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1802453-04MB	NA	NA	20.00 g	4 mL	

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

**Cover Page - Organic Analysis Data Package
 Organochlorine Pesticides**

Sample Name	Lab Code	Date Collected	Date Received
SED-1	K1801446-001	02/12/2018	02/14/2018
SED-2	K1801446-002	02/12/2018	02/14/2018
SED-3	K1801446-003	02/12/2018	02/14/2018
SED-4	K1801446-004	02/12/2018	02/14/2018
SED-5	K1801446-005	02/12/2018	02/14/2018
SED-6	K1801446-006	02/12/2018	02/14/2018
SED-7	K1801446-007	02/12/2018	02/14/2018
SED-8	K1801446-008	02/12/2018	02/14/2018
SED-9	K1801446-009	02/12/2018	02/14/2018
SED-10	K1801446-010	02/12/2018	02/14/2018
SED-11	K1801446-011	02/12/2018	02/14/2018
SED-12	K1801446-012	02/12/2018	02/14/2018
SED-13	K1801446-013	02/12/2018	02/14/2018
SED-6MS	KWG1801137-1	02/12/2018	02/14/2018
SED-6DMS	KWG1801137-2	02/12/2018	02/14/2018

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-1
Lab Code: K1801446-001
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	1.7	JP	1.9	0.59	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	4.2	4.2	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.9	1.2	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.9	0.72	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.9	0.78	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	U	1.9	0.42	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	1.9	0.76	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	1.9	1.2	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	3.2	3.2	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.9	0.89	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	U	1.9	0.52	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	1.9	0.91	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	2.8		1.9	0.48	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	U	1.9	0.55	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.9	1.4	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	78	70-130	03/08/18	Acceptable
Decachlorobiphenyl	85	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-2
Lab Code: K1801446-002
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	Ui	1.6	0.86	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.6	0.61	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.6	0.92	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	Ui	1.6	1.1	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.6	0.64	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	U	1.6	0.35	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	1.6	0.63	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	Ui	2.4	2.4	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	U	1.6	0.95	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.6	0.73	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	U	1.6	0.42	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	1.6	0.75	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.6	0.39	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	U	1.6	0.46	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.6	1.2	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	88	70-130	03/08/18	Acceptable
Decachlorobiphenyl	83	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-3
Lab Code: K1801446-003
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	1.8	JP	2.3	0.69	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	2.6	2.6	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	2.3	0.85	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	2.3	0.91	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	0.75	JP	2.3	0.49	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	2.3	0.89	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	2.3	1.5	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	5.3		2.3	0.56	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	2.3	1.2	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	2.3	1.6	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	82	70-130	03/08/18	Acceptable
Decachlorobiphenyl	81	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-4
Lab Code: K1801446-004
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	1.8	0.55	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.8	0.69	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.8	1.1	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	Ui	1.8	1.3	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.8	0.72	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	U	1.8	0.39	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	1.8	0.70	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	1.8	1.1	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	U	1.8	1.1	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.8	0.83	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	1.8	1.0	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	1.8	0.84	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.8	0.44	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	1.8	1.6	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.8	1.3	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	77	70-130	03/08/18	Acceptable
Decachlorobiphenyl	78	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-5
Lab Code: K1801446-005
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	2.6	P	2.3	0.70	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	3.1	3.1	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	2.3	0.86	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	2.3	0.92	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	1.9	J	2.3	0.50	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	2.3	0.90	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	2.1	J	2.3	0.61	1	02/26/18	03/08/18	KWG1801137	*
2,4'-DDT	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	4.9	P	2.3	0.56	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	2.3	1.7	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	2.3	1.6	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	72	70-130	03/08/18	Acceptable
Decachlorobiphenyl	77	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-6
Lab Code: K1801446-006
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	2.4	0.74	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	2.4	0.93	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	2.4	1.5	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	Ui	2.4	2.0	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	2.4	0.98	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	Ui	2.4	0.93	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	2.4	0.96	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	Ui	4.5	4.5	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	U	2.4	1.5	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	2.4	1.2	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	U	2.4	0.65	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	2.4	1.2	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	2.4	0.60	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	U	2.4	0.70	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	2.4	1.7	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	91	70-130	03/08/18	Acceptable
Decachlorobiphenyl	78	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-7
Lab Code: K1801446-007
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	1.4	0.41	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.4	0.52	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.4	0.78	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.4	0.50	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.4	0.54	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	Ui	1.4	1.3	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	Ui	1.4	0.86	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	1.4	0.79	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	2.4	2.4	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.4	0.62	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	1.4	0.79	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	1.2	JP	1.4	0.63	1	02/26/18	03/08/18	KWG1801137	*
Oxychlordane	ND	U	1.4	0.33	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	1.4	1.2	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.4	0.94	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	92	70-130	03/08/18	Acceptable
Decachlorobiphenyl	73	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-8
Lab Code: K1801446-008
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	1.7	0.52	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.7	0.65	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.7	0.98	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.7	0.64	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.7	0.69	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	U	1.7	0.37	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	U	1.7	0.67	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	Ui	1.7	1.1	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	4.9	4.9	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.7	0.79	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	6.4	6.4	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	Ui	7.2	7.2	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.7	0.42	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	4.8	4.8	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.7	1.2	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	83	70-130	03/08/18	Acceptable
Decachlorobiphenyl	79	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-9
Lab Code: K1801446-009
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	2.3	0.69	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	2.3	2.2	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	2.3	0.85	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	Ui	3.0	3.0	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	5.3		2.3	0.49	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	1.0	JP	2.3	0.89	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	4.1	P	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	5.9	5.9	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	6.7	P	2.3	0.60	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	2.3	1.1	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	Ui	2.3	1.4	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	5.0	5.0	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	2.3	1.6	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	82	70-130	03/08/18	Acceptable
Decachlorobiphenyl	81	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-10
Lab Code: K1801446-010
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	0.72	JP	1.2	0.37	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	1.2	0.52	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.2	0.70	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.2	0.45	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	Ui	1.2	1.2	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	Ui	4.8	4.8	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	ND	Ui	2.5	2.5	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	19		1.2	0.71	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	8.2	8.2	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.2	0.56	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	38	38	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	Ui	17	17	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.2	0.30	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	7.5	P	1.2	0.35	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.2	0.84	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	83	70-130	03/08/18	Acceptable
Decachlorobiphenyl	77	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-11
Lab Code: K1801446-011
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	0.59	JP	1.6	0.49	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.6	0.61	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.6	0.93	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.6	0.60	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	Ui	2.7	2.7	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	Ui	1.6	1.6	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	2.5		1.6	0.63	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	5.7	P	1.6	0.94	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	5.3	5.3	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.6	0.74	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	15	15	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	1.6	0.76	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.6	0.40	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	4.6	4.6	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.6	1.2	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	76	70-130	03/08/18	Acceptable
Decachlorobiphenyl	76	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-12
Lab Code: K1801446-012
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	1.4	0.42	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.4	0.53	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.4	0.79	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	Ui	1.4	1.3	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	1.1	J	1.4	0.55	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	1.6		1.4	0.30	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	0.85	J	1.4	0.54	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	ND	U	1.4	0.81	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	2.4	2.4	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	U	1.4	0.63	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	2.2	2.2	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	U	1.4	0.65	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.4	0.34	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	Ui	1.4	0.73	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.4	0.95	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	84	70-130	03/08/18	Acceptable
Decachlorobiphenyl	82	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018

Organochlorine Pesticides

Sample Name: SED-13
Lab Code: K1801446-013
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	0.84	JP	1.2	0.35	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	Ui	1.2	1.2	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.2	0.66	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	Ui	4.0	4.0	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.2	0.46	1	02/26/18	03/08/18	KWG1801137	
Dieldrin	ND	Ui	4.7	4.7	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDE	4.0	P	1.2	0.45	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDD	36		1.2	0.67	1	02/26/18	03/08/18	KWG1801137	
4,4'-DDT	ND	Ui	30	30	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDE	ND	Ui	1.2	1.1	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDD	ND	Ui	25	25	1	02/26/18	03/08/18	KWG1801137	
2,4'-DDT	ND	Ui	2.3	2.3	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.2	0.28	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	12		1.2	0.33	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	Ui	1.2	1.1	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	70	70-130	03/08/18	Acceptable
Decachlorobiphenyl	72	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Analytical Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: NA
Date Received: NA

Organochlorine Pesticides

Sample Name: Method Blank
Lab Code: KWG801137-10
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dy
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
gamma-BHC (Lindane)	ND	U	1.0	0.31	1	02/26/18	03/08/18	KWG1801137	
Heptachlor	ND	U	1.0	0.39	1	02/26/18	03/08/18	KWG1801137	
Aldrin	ND	U	1.0	0.59	1	02/26/18	03/08/18	KWG1801137	
gamma-Chlordane†	ND	U	1.0	0.38	1	02/26/18	03/08/18	KWG1801137	
alpha-Chlordane	ND	U	1.0	0.41	1	02/26/18	03/08/18	KWG1801137	
Deldrin	ND	U	1.0	0.22	1	02/26/18	03/08/18	KWG1801137	
4,4'-DE	ND	U	1.0	0.40	1	02/26/18	03/08/18	KWG1801137	
4,4'-DD	ND	U	1.0	0.60	1	02/26/18	03/08/18	KWG1801137	
4,4'-DT	ND	U	1.0	0.61	1	02/26/18	03/08/18	KWG1801137	
2,4'-DE	ND	U	1.0	0.47	1	02/26/18	03/08/18	KWG1801137	
2,4'-DD	ND	U	1.0	0.27	1	02/26/18	03/08/18	KWG1801137	
2,4'-DT	ND	U	1.0	0.48	1	02/26/18	03/08/18	KWG1801137	
Oxychlordane	ND	U	1.0	0.25	1	02/26/18	03/08/18	KWG1801137	*
cis-Nonachlor	ND	U	1.0	0.29	1	02/26/18	03/08/18	KWG1801137	
trans-Nonachlor	ND	U	1.0	0.71	1	02/26/18	03/08/18	KWG1801137	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	74	70-130	03/08/18	Acceptable
Dcachlorobiphenyl	79	70-130	03/08/18	Acceptable

† Analyte Comments

gamma-Chlordane For this analyte (CAS Registry No. 5 103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments: _____

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446

**Surrogate Recovery Summary
 Organochlorine Pesticides**

Extraction Method: EPA 3546
Analysis Method: 8081B

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>
SED-1	K1801446-001	78	85
SED-2	K1801446-002	88	83
SED-3	K1801446-003	82	81
SED-4	K1801446-004	77	78
SED-5	K1801446-005	72	77
SED-6	K1801446-006	91	78
SED-7	K1801446-007	92	73
SED-8	K1801446-008	83	79
SED-9	K1801446-009	82	81
SED-10	K1801446-010	83	77
SED-11	K1801446-011	76	76
SED-12	K1801446-012	84	82
SED-13	K1801446-013	70	72
Method Blank	KWG1801137-10	74	79
SED-6MS	KWG1801137-1	88	81
SED-6DMS	KWG1801137-2	81	84
Lab Control Sample	KWG1801137-7	74	79

Surrogate Recovery Control Limits (%)

Sur1 = Tetrachloro-m-xylene	70-130
Sur2 = Decachlorobiphenyl	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 07:57

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F002.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB XLB

	1-Bromo-2-nitrobenzene	
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	9,529,772	5.75
Upper Limit ==>	19,059,544	6.25
Lower Limit ==>	4,764,886	5.25

Associated Analyses

Sample Name	ID	Area	RT
Continuing Calibration Verification	CCV KWG1801351-3	12,024,030	5.71
SED-1	K1801446-001	10,932,880	5.72
SED-2	K1801446-002	11,199,580	5.72
SED-3	K1801446-003	10,832,990	5.72
SED-5	K1801446-005	13,925,060	5.72
SED-6	K1801446-006	11,689,150	5.71
SED-7	K1801446-007	12,380,610	5.71
SED-4	K1801446-004	14,845,450	5.71
SED-8	K1801446-008	15,305,070	5.72
SED-9	K1801446-009	11,522,070	5.71
SED-10	K1801446-010	10,263,540	5.72
SED-11	K1801446-011	12,466,480	5.72
SED-12	K1801446-012	11,304,940	5.72
SED-13	K1801446-013	12,345,100	5.72
SED-6MS	KWG1801137-1	10,320,870	5.72
SED-6DMS	KWG1801137-2	10,343,920	5.72
SED-6MS	KWG1801137-1	11,704,060	5.72
Lab Control Sample	KWG1801137-7	12,447,300	5.72
Lab Control Sample	KWG1801137-7	11,480,660	5.72
Method Blank	KWG1801137-10	11,982,070	5.72

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 07:57

Internal Standard Area and RT Summary
Organochlorine Pesticides

File ID: J:\GC23\DATA\030818\0308F002.D\0308F002C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB-35MS

	1-Bromo-2-nitrobenzene	
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	2,006,618	5.13
Upper Limit ==>	4,013,236	5.63
Lower Limit ==>	1,003,309	4.63

Associated Analyses

Continuing Calibration Verification	CCV	KWG1801351-3	2,335,160 5.09
SED-1		K1801446-001	2,369,637 5.10
SED-2		K1801446-002	2,465,156 5.10
SED-3		K1801446-003	2,361,848 5.10
SED-5		K1801446-005	2,726,363 5.09
SED-6		K1801446-006	2,384,295 5.09
SED-7		K1801446-007	2,656,111 5.09
SED-4		K1801446-004	3,139,510 5.09
SED-8		K1801446-008	3,279,985 5.09
SED-9		K1801446-009	2,519,552 5.10
SED-10		K1801446-010	2,290,085 5.10
SED-11		K1801446-011	2,712,977 5.10
SED-12		K1801446-012	2,399,847 5.10
SED-13		K1801446-013	2,648,580 5.10
SED-6MS		KWG1801137-1	2,263,497 5.10
SED-6DMS		KWG1801137-2	2,280,157 5.10
SED-6MS		KWG1801137-1	2,585,374 5.10
Lab Control Sample		KWG1801137-7	2,718,642 5.10
Lab Control Sample		KWG1801137-7	2,504,196 5.10
Method Blank		KWG1801137-10	2,642,517 5.10

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 08:27

Internal Standard Area and RT Summary
Organochlorine Pesticides

File ID: J:\GC23\DATA\030818\0308F003.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB XLB

1-Bromo-2-nitrobenzene {4}

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	7,364,371	5.82
Upper Limit ==>	14,728,742	6.32
Lower Limit ==>	3,682,186	5.32

Associated Analyses

Continuing Calibration Verification	CCV	KWG1801351-3	11,385,830 5.71
SED-1		K1801446-001	10,932,880 5.72
SED-2		K1801446-002	11,199,580 5.72
SED-3		K1801446-003	10,832,990 5.72
SED-5		K1801446-005	13,925,060 5.72
SED-6		K1801446-006	11,689,150 5.71
SED-7		K1801446-007	12,380,610 5.71
SED-4		K1801446-004	14,845,450* 5.71
SED-8		K1801446-008	15,305,070* 5.72
SED-9		K1801446-009	11,522,070 5.71
SED-10		K1801446-010	10,263,540 5.72
SED-11		K1801446-011	12,466,480 5.72
SED-12		K1801446-012	11,304,940 5.72
SED-13		K1801446-013	12,345,100 5.72
SED-6MS		KWG1801137-1	10,320,870 5.72
SED-6DMS		KWG1801137-2	10,343,920 5.72
Lab Control Sample		KWG1801137-7	12,447,300 5.72
Method Blank		KWG1801137-10	11,982,070 5.72

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 08:27

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F003.D\0308F003C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB-35MS

1-Bromo-2-nitrobenzene {4}

	<u>Area</u>	<u>RT</u>
ICAL Average ==>	1,836,874	5.22
Upper Limit ==>	3,673,748	5.72
Lower Limit ==>	918,437	4.72

Associated Analyses

Continuing Calibration Verification	CCV	KWG1801351-3	2,374,838 5.09
SED-1		K1801446-001	2,369,637 5.10
SED-2		K1801446-002	2,465,156 5.10
SED-3		K1801446-003	2,361,848 5.10
SED-5		K1801446-005	2,726,363 5.09
SED-6		K1801446-006	2,384,295 5.09
SED-7		K1801446-007	2,656,111 5.09
SED-4		K1801446-004	3,139,510 5.09
SED-8		K1801446-008	3,279,985 5.09
SED-9		K1801446-009	2,519,552 5.10
SED-10		K1801446-010	2,290,085 5.10
SED-11		K1801446-011	2,712,977 5.10
SED-12		K1801446-012	2,399,847 5.10
SED-13		K1801446-013	2,648,580 5.10
SED-6MS		KWG1801137-1	2,263,497 5.10
SED-6DMS		KWG1801137-2	2,280,157 5.10
Lab Control Sample		KWG1801137-7	2,718,642 5.10
Method Blank		KWG1801137-10	2,642,517 5.10

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 08:56

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F004.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB XLB

	1-Bromo-2-nitrobenzene	
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	9,529,772	5.75
Upper Limit ==>	19,059,544	6.25
Lower Limit ==>	4,764,886	5.25

Associated Analyses

Continuing Calibration Verification	CCV	KWG1801351-3	9,462,162 5.72
SED-1		K1801446-001	10,932,880 5.72
SED-2		K1801446-002	11,199,580 5.72
SED-3		K1801446-003	10,832,990 5.72
SED-5		K1801446-005	13,925,060 5.72
SED-6		K1801446-006	11,689,150 5.71
SED-7		K1801446-007	12,380,610 5.71
SED-4		K1801446-004	14,845,450 5.71
SED-8		K1801446-008	15,305,070 5.72
SED-9		K1801446-009	11,522,070 5.71
SED-10		K1801446-010	10,263,540 5.72
SED-11		K1801446-011	12,466,480 5.72
SED-12		K1801446-012	11,304,940 5.72
SED-13		K1801446-013	12,345,100 5.72
SED-6MS		KWG1801137-1	10,320,870 5.72
SED-6DMS		KWG1801137-2	10,343,920 5.72
SED-6MS		KWG1801137-1	11,704,060 5.72
Lab Control Sample		KWG1801137-7	12,447,300 5.72
Lab Control Sample		KWG1801137-7	11,480,660 5.72
Method Blank		KWG1801137-10	11,982,070 5.72

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 08:56

Internal Standard Area and RT Summary
Organochlorine Pesticides

File ID: J:\GC23\DATA\030818\0308F004.D\0308F004C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-3
Analysis Lot: KWG1801351
Column : DB-35MS

	1-Bromo-2-nitrobenzene	
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	2,006,618	5.13
Upper Limit ==>	4,013,236	5.63
Lower Limit ==>	1,003,309	4.63

Associated Analyses

Sample Name	Lab Code	Area	RT
Continuing Calibration Verification	CCV KWG1801351-3	2,021,765	5.10
SED-1	K1801446-001	2,369,637	5.10
SED-2	K1801446-002	2,465,156	5.10
SED-3	K1801446-003	2,361,848	5.10
SED-5	K1801446-005	2,726,363	5.09
SED-6	K1801446-006	2,384,295	5.09
SED-7	K1801446-007	2,656,111	5.09
SED-4	K1801446-004	3,139,510	5.09
SED-8	K1801446-008	3,279,985	5.09
SED-9	K1801446-009	2,519,552	5.10
SED-10	K1801446-010	2,290,085	5.10
SED-11	K1801446-011	2,712,977	5.10
SED-12	K1801446-012	2,399,847	5.10
SED-13	K1801446-013	2,648,580	5.10
SED-6MS	KWG1801137-1	2,263,497	5.10
SED-6DMS	KWG1801137-2	2,280,157	5.10
SED-6MS	KWG1801137-1	2,585,374	5.10
Lab Control Sample	KWG1801137-7	2,718,642	5.10
Lab Control Sample	KWG1801137-7	2,504,196	5.10
Method Blank	KWG1801137-10	2,642,517	5.10

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 23:03

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F027.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-6
Analysis Lot: KWG1801351
Column : DB XLB

1-Bromo-2-nitrobenzene		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	9,529,772	5.75
Upper Limit ==>	19,059,544	6.25
Lower Limit ==>	4,764,886	5.25
<hr/>		
<i>Associated Analyses</i>		
Continuing Calibration VerificationCCV KWG1801351-6	10,647,340	5.72

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018
Time Analyzed: 23:03

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F027.D\0308F027C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-6
Analysis Lot: KWG1801351
Column : DB-35MS

1-Bromo-2-nitrobenzene		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	2,006,618	5.13
Upper Limit ==>	4,013,236	5.63
Lower Limit ==>	1,003,309	4.63
<hr/>		
Continuing Calibration VerificationCCV KWG1801351-6	2,336,919	5.10

Associated Analyses

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018
Time Analyzed: 00:03

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F029.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-6
Analysis Lot: KWG1801351
Column : DB XLB

1-Bromo-2-nitrobenzene {4}		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	7,364,371	5.82
Upper Limit ==>	14,728,742	6.32
Lower Limit ==>	3,682,186	5.32
<hr/>		
<i>Associated Analyses</i>		
Continuing Calibration VerificationCCV KWG1801351-6	10,827,170	5.72

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018
Time Analyzed: 00:03

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F029.D\0308F029C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-6
Analysis Lot: KWG1801351
Column : DB-35MS

1-Bromo-2-nitrobenzene {4}		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	1,836,874	5.22
Upper Limit ==>	3,673,748	5.72
Lower Limit ==>	918,437	4.72
<hr/>		
<i>Associated Analyses</i>		
Continuing Calibration VerificationCCV KWG1801351-6	2,378,077	5.10

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018
Time Analyzed: 07:23

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F044.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-9
Analysis Lot: KWG1801351
Column : DB XLB

1-Bromo-2-nitrobenzene		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	9,529,772	5.75
Upper Limit ==>	19,059,544	6.25
Lower Limit ==>	4,764,886	5.25
<hr/>		
Continuing Calibration VerificationCCV KWG1801351-9	11,532,770	5.72

Associated Analyses

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018
Time Analyzed: 07:23

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\030818\0308F044.D\0308F044C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801351-9
Analysis Lot: KWG1801351
Column : DB-35MS

1-Bromo-2-nitrobenzene		
	<u>Area</u>	<u>RT</u>
ICAL Average ==>	2,006,618	5.13
Upper Limit ==>	4,013,236	5.63
Lower Limit ==>	1,003,309	4.63
<hr/>		
Continuing Calibration VerificationCCV	KWG1801351-9	2,425,892 5.10

Associated Analyses

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018
Time Analyzed: 10:45

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\032918\0329F002.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801701-3
Analysis Lot: KWG1801701
Column : DB XLB

		1-Bromo-2-nitrobenzene	
		<u>Area</u>	<u>RT</u>
	ICAL Average ==>	9,529,772	5.75
	Upper Limit ==>	19,059,544	6.25
	Lower Limit ==>	4,764,886	5.25
<hr/>			
<i>Associated Analyses</i>			
Continuing Calibration Verification	CCV KWG1801701-3	10,730,210	5.69
SED-6DMS	KWG1801137-2	8,831,898	5.70

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018
Time Analyzed: 10:45

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\032918\0329F002.D\0329F002C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801701-3
Analysis Lot: KWG1801701
Column : DB-35MS

		1-Bromo-2-nitrobenzene	
		<u>Area</u>	<u>RT</u>
	ICAL Average ==>	2,006,618	5.13
	Upper Limit ==>	4,013,236	5.63
	Lower Limit ==>	1,003,309	4.63
<hr/>			
<i>Associated Analyses</i>			
Continuing Calibration Verification	CCV	KWG1801701-3	2,182,910 5.08
SED-6DMS		KWG1801137-2	1,930,318 5.08

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018
Time Analyzed: 11:15

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\032918\0329F003.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801701-3
Analysis Lot: KWG1801701
Column : DB XLB

		1-Bromo-2-nitrobenzene	
		<u>Area</u>	<u>RT</u>
	ICAL Average ==>	9,529,772	5.75
	Upper Limit ==>	19,059,544	6.25
	Lower Limit ==>	4,764,886	5.25
Associated Analyses			
Continuing Calibration Verification	CCV KWG1801701-3	12,730,180	5.70
SED-6DMS	KWG1801137-2	8,831,898	5.70

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018
Time Analyzed: 11:15

**Internal Standard Area and RT Summary
 Organochlorine Pesticides**

File ID: J:\GC23\DATA\032918\0329F003.D\0329F003C.D
Instrument ID: GC23
Analysis Method: 8081B

Lab Code: KWG1801701-3
Analysis Lot: KWG1801701
Column : DB-35MS

		1-Bromo-2-nitrobenzene	
		<u>Area</u>	<u>RT</u>
	ICAL Average ==>	2,006,618	5.13
	Upper Limit ==>	4,013,236	5.63
	Lower Limit ==>	1,003,309	4.63
Associated Analyses			
Continuing Calibration Verification	CCV KWG1801701-3	2,671,913	5.08
SED-6DMS	KWG1801137-2	1,930,318	5.08

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/08/2018 - 03/29/2018

Matrix Spike/Duplicate Matrix Spike Summary
Organochlorine Pesticides

Sample Name: SED-6
Lab Code: K1801446-006
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801137

Analyte Name	Sample Result	SED-6MS KWG1801137-1 Matrix Spike			SED-6DMS KWG1801137-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
gamma-BHC (Lindane)	ND	49.3	58.9	84	43.8	59.2	74	70-130	12	40
Heptachlor	ND	46.9	58.9	80	45.3	59.2	77	70-130	4	40
Aldrin	ND	39.7	58.9	67 *	41.3	59.2	70	70-130	4	40
gamma-Chlordane	ND	52.4	58.9	89	49.9	59.2	84	70-130	5	40
alpha-Chlordane	ND	42.9	58.9	73	48.1	59.2	81	70-130	11	40
Dieldrin	ND	45.0	58.9	76	45.1	59.2	76	70-130	0	40
4,4'-DDE	ND	46.8	58.9	79	48.2	59.2	82	70-130	3	40
4,4'-DDD	ND	37.5	58.9	64 #	38.8	59.2	66 #	70-130	4	40
4,4'-DDT	ND	58.7	58.9	100	55.4	59.2	94	70-130	6	40
2,4'-DDE	ND	42.5	59.8	71	49.8	59.2	84	70-130	16	40
2,4'-DDD	ND	57.0	59.8	95	67.9	59.2	115	70-130	17	40
2,4'-DDT	ND	63.0	59.8	105	68.0	59.2	115	70-130	8	40
Oxychlordane	ND	32.2	58.9	55 *	24.2	59.2	41 *	70-130	28	40
cis-Nonachlor	ND	41.4	58.9	70	40.3	59.2	68 *	70-130	3	40
trans-Nonachlor	ND	39.7	58.9	67 *	35.9	59.2	61 *	70-130	10	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/08/2018

Lab Control Spike Summary
Organochlorine Pesticides

Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801137

Lab Control Sample
 KWG1801137-7
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
gamma-BHC (Lindane)	21.3	25.0	85	70-130
Heptachlor	22.1	25.0	88	70-130
Aldrin	18.7	25.0	75	70-130
gamma-Chlordane	18.0	25.0	72	70-130
alpha-Chlordane	20.9	25.0	84	70-130
Dieldrin	18.9	25.0	76	70-130
4,4'-DDE	19.7	25.0	79	70-130
4,4'-DDD	18.6	25.0	74	70-130
4,4'-DDT	22.8	25.0	91	70-130
2,4'-DDE	19.4	25.0	78	70-130
2,4'-DDD	25.2	25.0	101	70-130
2,4'-DDT	25.7	25.0	103	70-130
Oxychlordane	15.5	25.0	62 *	70-130
cis-Nonachlor	17.9	25.0	72	70-130
trans-Nonachlor	16.7	25.0	67 *	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018
Date Analyzed: 03/08/2018
Time Analyzed: 22:03

Method Blank Summary
Organochlorine Pesticides

Sample Name: Method Blank **Instrument ID:** GC23
Lab Code: KWG1801137-10 **File ID:** J:\GC23\DATA\030818\0308F025.D
Extraction Method: EPA 3546 **Level:** Low
Analysis Method: 8081B **Extraction Lot:** KWG1801137

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
SED-1	K1801446-001	J:\GC23\DATA\030818\0308F006.D	03/08/18	09:56
SED-2	K1801446-002	J:\GC23\DATA\030818\0308F007.D	03/08/18	10:26
SED-3	K1801446-003	J:\GC23\DATA\030818\0308F008.D	03/08/18	10:56
SED-5	K1801446-005	J:\GC23\DATA\030818\0308F010.D	03/08/18	14:08
SED-6	K1801446-006	J:\GC23\DATA\030818\0308F011.D	03/08/18	14:38
SED-7	K1801446-007	J:\GC23\DATA\030818\0308F012.D	03/08/18	15:08
SED-4	K1801446-004	J:\GC23\DATA\030818\0308FX09.D	03/08/18	15:37
SED-8	K1801446-008	J:\GC23\DATA\030818\0308F013.D	03/08/18	16:07
SED-9	K1801446-009	J:\GC23\DATA\030818\0308F014.D	03/08/18	16:36
SED-10	K1801446-010	J:\GC23\DATA\030818\0308F015.D	03/08/18	17:06
SED-11	K1801446-011	J:\GC23\DATA\030818\0308F016.D	03/08/18	17:35
SED-12	K1801446-012	J:\GC23\DATA\030818\0308F017.D	03/08/18	18:05
SED-13	K1801446-013	J:\GC23\DATA\030818\0308F018.D	03/08/18	18:34
SED-6MS	KWG1801137-1	J:\GC23\DATA\030818\0308F019.D	03/08/18	19:04
SED-6DMS	KWG1801137-2	J:\GC23\DATA\030818\0308F020.D	03/08/18	19:34
SED-6MS	KWG1801137-1	J:\GC23\DATA\030818\0308F021.D	03/08/18	20:04
Lab Control Sample	KWG1801137-7	J:\GC23\DATA\030818\0308F023.D	03/08/18	21:04
Lab Control Sample	KWG1801137-7	J:\GC23\DATA\030818\0308F024.D	03/08/18	21:34
SED-6DMS	KWG1801137-2	J:\GC23\DATA\032918\0329F005.D	03/29/18	12:13

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB XLB

Level ID	File ID	Level ID	File ID
A	J:\GC23\DATA\040817\0409F014.D	R	J:\GC23\DATA\040817\0409F065.D
B	J:\GC23\DATA\040817\0409F015.D	S	J:\GC23\DATA\040817\0409F066.D
C	J:\GC23\DATA\040817\0409F016.D	T	J:\GC23\DATA\040817\0409F070.D
D	J:\GC23\DATA\040817\0409F017.D	U	J:\GC23\DATA\111417\1114F016.D
E	J:\GC23\DATA\040817\0409F019.D	V	J:\GC23\DATA\111417\1114F017.D
F	J:\GC23\DATA\040817\0409F020.D	W	J:\GC23\DATA\111417\1114F018.D
G	J:\GC23\DATA\040817\0409F022.D	X	J:\GC23\DATA\111417\1114F019.D
H	J:\GC23\DATA\040817\0409F023.D	Y	J:\GC23\DATA\111417\1114F020.D
I	J:\GC23\DATA\040817\0409F024.D	Z	J:\GC23\DATA\111417\1114F021.D
J	J:\GC23\DATA\040817\0409F025.D	AA	J:\GC23\DATA\021418CAL\0214F019.D
K	J:\GC23\DATA\040817\0409F026.D	AB	J:\GC23\DATA\021418CAL\0214F020.D
L	J:\GC23\DATA\040817\0409F027.D	AC	J:\GC23\DATA\021418CAL\0214F021.D
M	J:\GC23\DATA\040817\0409F028.D	AD	J:\GC23\DATA\021418CAL\0214F022.D
N	J:\GC23\DATA\040817\0409F061.D	AE	J:\GC23\DATA\021418CAL\0214F023.D
O	J:\GC23\DATA\040817\0409F062.D	AF	J:\GC23\DATA\021418CAL\0214F024.D
P	J:\GC23\DATA\040817\0409F063.D		
Q	J:\GC23\DATA\040817\0409F064.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF			
Tetrachloro-m-xylene				AA	0.20	1.39	AB	0.50	1.22	AC	1.0	1.19	AD	2.0	1.19
	AE	5.0	1.02	AF	10	0.935									
Decachlorobiphenyl				AA	0.20	0.679	AB	0.50	0.774	AC	1.0	0.655	AD	2.0	0.702
	AE	5.0	0.604	AF	10	0.560									
gamma-BHC (Lindane)				AA	0.20	1.54	AB	0.50	1.59	AC	1.0	1.42	AD	2.0	1.40
	AE	5.0	1.23	AF	10	1.15									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB XLB

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Heptachlor				AA	0.20	1.42	AB	0.50	1.31	AC	1.0	1.16	AD	2.0	1.24
	AE	5.0	1.06	AF	10	0.948									
Aldrin				AA	0.20	1.50	AB	0.50	1.39	AC	1.0	1.42	AD	2.0	1.35
	AE	5.0	1.16	AF	10	1.07									
gamma-Chlordane				AA	0.20	1.53	AB	0.50	1.31	AC	1.0	1.22	AD	2.0	1.19
	AE	5.0	1.03	AF	10	0.938									
alpha-Chlordane				AA	0.20	1.34	AB	0.50	1.25	AC	1.0	1.20	AD	2.0	1.19
	AE	5.0	1.01	AF	10	0.905									
Dieldrin				AA	0.20	1.49	AB	0.50	1.38	AC	1.0	1.23	AD	2.0	1.25
	AE	5.0	1.07	AF	10	0.969									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB XLB

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
4,4'-DDE				AA	0.20	1.46	AB	0.50	1.31	AC	1.0	1.20	AD	2.0	1.22
	AE	5.0	1.03	AF	10	0.944									
4,4'-DDD				AA	0.20	1.26	AB	0.50	1.15	AC	1.0	1.02	AD	2.0	1.01
	AE	5.0	0.843	AF	10	0.767									
4,4'-DDT				AA	0.20	1.10	AB	0.50	0.884	AC	1.0	0.883	AD	2.0	0.917
	AE	5.0	0.797	AF	10	0.723									
2,4'-DDE															
	U	0.20	1.05	V	0.50	1.04	W	1.0	0.891	X	2.0	0.852	Y	5.0	0.724
	Z	10	0.703												
2,4'-DDD															
	U	0.20	1.16	V	0.50	0.724	W	1.0	0.706	X	2.0	0.666	Y	5.0	0.574
	Z	10	0.559												

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB XLB

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
2,4'-DDT	U	0.20	1.30	V	0.50	0.810	W	1.0	0.767	X	2.0	0.742	Y	5.0	0.629
	Z	10	0.616												
Oxychlorthane	P	2.0	1.23	Q	5.0	1.20	R	10	1.05	N	0.50	1.40	O	1.0	1.21
										S	20	1.04	T	0.20	1.48
cis-Nonachlor	P	2.0	1.41	Q	5.0	1.37	R	10	1.20	N	0.50	1.55	O	1.0	1.39
										S	20	1.20	T	0.20	1.83
trans-Nonachlor	P	2.0	1.31	Q	5.0	1.26	R	10	1.10	N	0.50	1.41	O	1.0	1.22
										S	20	1.10	T	0.20	1.57

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB XLB

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Tetrachloro-m-xylene	SURR	AverageRF	% RSD	13.7		≤20	1.16		
Decachlorobiphenyl	SURR	AverageRF	% RSD	11.3		≤20	0.662		
gamma-BHC (Lindane)	MS	AverageRF	% RSD	12.4		≤20	1.39		
Heptachlor	MS	AverageRF	% RSD	14.3		≤20	1.19		
Aldrin	MS	AverageRF	% RSD	12.5		≤20	1.31		
gamma-Chlordane	MS	AverageRF	% RSD	17.4		≤20	1.20		
alpha-Chlordane	MS	AverageRF	% RSD	14.0		≤20	1.15		
Dieldrin	MS	AverageRF	% RSD	15.6		≤20	1.23		
4,4'-DDE	MS	AverageRF	% RSD	15.6		≤20	1.20		
4,4'-DDD	MS	Quadratic	COD	0.999		≥0.990	1.01		
4,4'-DDT	MS	AverageRF	% RSD	14.4		≤20	0.884		
2,4'-DDE	MS	Quadratic	COD	0.998		≥0.990	0.875		
2,4'-DDD	MS	Quadratic	COD	0.999		≥0.990	0.732		
2,4'-DDT	MS	Quadratic	COD	0.999		≥0.990	0.811		
Oxychlordane	MS	AverageRF	% RSD	13.4		≤20	1.23		
cis-Nonachlor	MS	AverageRF	% RSD	15.4		≤20	1.42		
trans-Nonachlor	MS	AverageRF	% RSD	13.2		≤20	1.28		

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017
Date Analyzed: 04/10/2017 - 02/15/2018

**Second Source Calibration Verification
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration ID: CAL15707
Units: ug/L

File ID: J:\GC23\DATA\021418CAL\0214F026.D
 J:\GC23\DATA\111417-CAL\0409F021.D
 J:\GC23\DATA\111417-CAL\0409F029.D
 J:\GC23\DATA\111417-CAL\0409F071.D
 J:\GC23\DATA\111417-CAL\0409F080.D
 J:\GC23\DATA\111417-CAL\1114F023.D

Column ID: DB XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
gamma-BHC (Lindane)	2.0	1.8	1.39	1.24	-11	NA	± 20 %	AverageRF
Heptachlor	2.0	1.7	1.19	1.03	-13	NA	± 20 %	AverageRF
Aldrin	2.0	1.8	1.31	1.15	-12	NA	± 20 %	AverageRF
gamma-Chlordane	2.0	1.7	1.20	1.05	-13	NA	± 20 %	AverageRF
alpha-Chlordane	2.0	1.8	1.15	1.03	-10	NA	± 20 %	AverageRF
Dieldrin	2.0	1.7	1.23	1.02	-17	NA	± 20 %	AverageRF
4,4'-DDE	2.0	1.8	1.20	1.05	-12	NA	± 20 %	AverageRF
4,4'-DDD	2.0	1.8	1.01	0.876	NA	-10	± 20 %	Quadratic
4,4'-DDT	2.0	1.8	0.884	0.805	-9	NA	± 20 %	AverageRF
2,4'-DDE	2.0	2.3	0.875	0.926	NA	14	± 20 %	Quadratic
2,4'-DDD	2.0	2.3	0.732	0.729	NA	17	± 20 %	Quadratic
2,4'-DDT	2.0	2.3	0.811	0.782	NA	13	± 20 %	Quadratic
Oxychlordane	2.0	1.8	1.23	1.12	-9	NA	± 20 %	AverageRF
cis-Nonachlor	2.0	1.9	1.42	1.36	-5	NA	± 20 %	AverageRF
trans-Nonachlor	2.0	2.1	1.28	1.32	3	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	J:\GC23\DATA\040817\0409F014.D\0409F014c.d	R	J:\GC23\DATA\040817\0409F065.D\0409F065c.d
B	J:\GC23\DATA\040817\0409F015.D\0409F015c.d	S	J:\GC23\DATA\040817\0409F066.D\0409F066c.d
C	J:\GC23\DATA\040817\0409F016.D\0409F016c.d	T	J:\GC23\DATA\040817\0409F070.D\0409F070c.d
D	J:\GC23\DATA\040817\0409F017.D\0409F017c.d	U	J:\GC23\DATA\111417\1114F016.D\1114F016c.d
E	J:\GC23\DATA\040817\0409F019.D\0409F019c.d	V	J:\GC23\DATA\111417\1114F017.D\1114F017c.d
F	J:\GC23\DATA\040817\0409F020.D\0409F020c.d	W	J:\GC23\DATA\111417\1114F018.D\1114F018c.d
G	J:\GC23\DATA\040817\0409F022.D\0409F022c.d	X	J:\GC23\DATA\111417\1114F019.D\1114F019c.d
H	J:\GC23\DATA\040817\0409F023.D\0409F023c.d	Y	J:\GC23\DATA\111417\1114F020.D\1114F020c.d
I	J:\GC23\DATA\040817\0409F024.D\0409F024c.d	Z	J:\GC23\DATA\111417\1114F021.D\1114F021c.d
J	J:\GC23\DATA\040817\0409F025.D\0409F025c.d	AA	J:\GC23\DATA\021418CAL\0214F019.D\0214F019c.d
K	J:\GC23\DATA\040817\0409F026.D\0409F026c.d	AB	J:\GC23\DATA\021418CAL\0214F020.D\0214F020c.d
L	J:\GC23\DATA\040817\0409F027.D\0409F027c.d	AC	J:\GC23\DATA\021418CAL\0214F021.D\0214F021c.d
M	J:\GC23\DATA\040817\0409F028.D\0409F028c.d	AD	J:\GC23\DATA\021418CAL\0214F022.D\0214F022c.d
N	J:\GC23\DATA\040817\0409F061.D\0409F061c.d	AE	J:\GC23\DATA\021418CAL\0214F023.D\0214F023c.d
O	J:\GC23\DATA\040817\0409F062.D\0409F062c.d	AF	J:\GC23\DATA\021418CAL\0214F024.D\0214F024c.d
P	J:\GC23\DATA\040817\0409F063.D\0409F063c.d		
Q	J:\GC23\DATA\040817\0409F064.D\0409F064c.d		

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF			
Tetrachloro-m-xylene				AA	0.20	1.44	AB	0.50	1.33	AC	1.0	1.20	AD	2.0	1.19
	AE	5.0	1.06	AF	10	0.976									
Decachlorobiphenyl				AA	0.20	1.15	AB	0.50	1.15	AC	1.0	1.04	AD	2.0	1.01
	AE	5.0	0.892	AF	10	0.828									
gamma-BHC (Lindane)				AA	0.20	1.55	AB	0.50	1.47	AC	1.0	1.38	AD	2.0	1.40
	AE	5.0	1.24	AF	10	1.17									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB-35MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Heptachlor				AA	0.20	1.67	AB	0.50	1.45	AC	1.0	1.33	AD	2.0	1.37
	AE	5.0	1.21	AF	10	1.11									
Aldrin				AA	0.20	1.65	AB	0.50	1.53	AC	1.0	1.39	AD	2.0	1.39
	AE	5.0	1.25	AF	10	1.15									
gamma-Chlordane				AA	0.20	1.51	AB	0.50	1.44	AC	1.0	1.29	AD	2.0	1.28
	AE	5.0	1.14	AF	10	1.05									
alpha-Chlordane				AA	0.20	1.41	AB	0.50	1.40	AC	1.0	1.29	AD	2.0	1.28
	AE	5.0	1.16	AF	10	1.05									
Dieldrin				AA	0.20	1.66	AB	0.50	1.40	AC	1.0	1.28	AD	2.0	1.29
	AE	5.0	1.13	AF	10	1.05									

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB-35MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
4,4'-DDE				AA	0.20	1.36	AB	0.50	1.37	AC	1.0	1.24	AD	2.0	1.27
	AE	5.0	1.12	AF	10	1.02									
4,4'-DDD				AA	0.20	1.23	AB	0.50	1.14	AC	1.0	1.03	AD	2.0	1.01
	AE	5.0	0.930	AF	10	0.837									
4,4'-DDT				AA	0.20	0.999	AB	0.50	0.961	AC	1.0	0.930	AD	2.0	0.936
	AE	5.0	0.845	AF	10	0.781									
2,4'-DDE															
	U	0.20	1.06	V	0.50	0.958	W	1.0	0.912	X	2.0	0.916	Y	5.0	0.844
2,4'-DDD															
	Z	10	0.824												
2,4'-DDD															
	U	0.20	0.834	V	0.50	0.804	W	1.0	0.738	X	2.0	0.715	Y	5.0	0.601
2,4'-DDD															
	Z	10	0.589												

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB-35MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
2,4'-DDT	U	0.20	1.41	V	0.50	0.838	W	1.0	0.803	X	2.0	0.763	Y	5.0	0.641
	Z	10	0.642												
Oxychlorthane	P	2.0	1.30	Q	5.0	1.27	R	10	1.14	N	0.50	1.34	O	1.0	1.25
										S	20	1.16	T	0.20	1.42
cis-Nonachlor	P	2.0	1.48	Q	5.0	1.43	R	10	1.29	N	0.50	1.64	O	1.0	1.43
										S	20	1.32	T	0.20	1.91
trans-Nonachlor	P	2.0	1.39	Q	5.0	1.34	R	10	1.19	N	0.50	1.49	O	1.0	1.33
										S	20	1.21	T	0.20	1.72

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017

Initial Calibration Summary
Organochlorine Pesticides

Calibration ID: CAL15707
Instrument ID: GC23

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Tetrachloro-m-xylene	SURR	AverageRF	% RSD	14.2		≤20	1.20		
Decachlorobiphenyl	SURR	AverageRF	% RSD	13.0		≤20	1.01		
gamma-BHC (Lindane)	MS	AverageRF	% RSD	10.3		≤20	1.37		
Heptachlor	MS	AverageRF	% RSD	14.3		≤20	1.36		
Aldrin	MS	AverageRF	% RSD	13.1		≤20	1.39		
gamma-Chlordane	MS	AverageRF	% RSD	13.5		≤20	1.29		
alpha-Chlordane	MS	AverageRF	% RSD	11.1		≤20	1.26		
Dieldrin	MS	AverageRF	% RSD	16.5		≤20	1.30		
4,4'-DDE	MS	AverageRF	% RSD	11.2		≤20	1.23		
4,4'-DDD	MS	AverageRF	% RSD	13.5		≤20	1.03		
4,4'-DDT	MS	AverageRF	% RSD	8.9		≤20	0.909		
2,4'-DDE	MS	AverageRF	% RSD	9.4		≤20	0.919		
2,4'-DDD	MS	AverageRF	% RSD	14.2		≤20	0.713		
2,4'-DDT	MS	Quadratic	COD	0.999		≥0.990	0.850		
Oxychlordane	MS	AverageRF	% RSD	7.8		≤20	1.27		
cis-Nonachlor	MS	AverageRF	% RSD	14.1		≤20	1.50		
trans-Nonachlor	MS	AverageRF	% RSD	13.0		≤20	1.38		

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Calibration Date: 04/09/2017
Date Analyzed: 04/10/2017 - 02/15/2018

**Second Source Calibration Verification
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration ID: CAL15707
Units: ug/L

File ID: J:\GC23\DATA\021418CAL\0214F026.D\0214F026c.d
 J:\GC23\DATA\111417-CAL\0409F021.D\0409F021c.d
 J:\GC23\DATA\111417-CAL\0409F029.D\0409F029c.d
 J:\GC23\DATA\111417-CAL\0409F071.D\0409F071c.d
 J:\GC23\DATA\111417-CAL\0409F080.D\0409F080c.d
 J:\GC23\DATA\111417-CAL\1114F023.D\1114F023c.d

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
gamma-BHC (Lindane)	2.0	1.8	1.37	1.21	-12	NA	± 20 %	AverageRF
Heptachlor	2.0	1.8	1.36	1.22	-10	NA	± 20 %	AverageRF
Aldrin	2.0	1.7	1.39	1.20	-14	NA	± 20 %	AverageRF
gamma-Chlordane	2.0	1.8	1.29	1.13	-12	NA	± 20 %	AverageRF
alpha-Chlordane	2.0	1.8	1.26	1.13	-11	NA	± 20 %	AverageRF
Dieldrin	2.0	1.7	1.30	1.07	-17	NA	± 20 %	AverageRF
4,4'-DDE	2.0	1.8	1.23	1.13	-8	NA	± 20 %	AverageRF
4,4'-DDD	2.0	1.8	1.03	0.905	-12	NA	± 20 %	AverageRF
4,4'-DDT	2.0	1.8	0.909	0.824	-9	NA	± 20 %	AverageRF
2,4'-DDE	2.0	2.2	0.919	1.01	9	NA	± 20 %	AverageRF
2,4'-DDD	2.0	2.3	0.713	0.736	3	NA	± 20 %	AverageRF
2,4'-DDT	2.0	1.9	0.850	0.798	NA	-6	± 20 %	Quadratic
Oxychlordane	2.0	1.8	1.27	1.17	-8	NA	± 20 %	AverageRF
cis-Nonachlor	2.0	1.9	1.50	1.42	-6	NA	± 20 %	AverageRF
trans-Nonachlor	2.0	2.0	1.38	1.41	2	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB XLB

File ID: J:\GC23\DATA\030818\0308F002.D
 J:\GC23\DATA\030818\0308F003.D
 J:\GC23\DATA\030818\0308F004.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.1		1.16	1.24	7	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		0.662	0.702	6	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.2		1.39	1.53	10	NA	± 20	AverageRF
Heptachlor	2.0	2.0		1.19	1.22	2	NA	± 20	AverageRF
Aldrin	2.0	2.2		1.31	1.45	10	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.1		1.20	1.29	7	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.15	1.25	8	NA	± 20	AverageRF
Dieldrin	2.0	2.1		1.23	1.31	6	NA	± 20	AverageRF
4,4'-DDE	2.0	2.1		1.20	1.26	5	NA	± 20	AverageRF
4,4'-DDD	2.0	2.1		1.01	0.995	NA	3	± 20	Quadratic
4,4'-DDT	2.0	2.0		0.884	0.905	2	NA	± 20	AverageRF
2,4'-DDE	2.0	2.3		0.875	0.949	NA	17	± 20	Quadratic
2,4'-DDD	2.0	2.7		0.732	0.832	NA	35 *	± 20	Quadratic
2,4'-DDT	2.0	2.6		0.811	0.878	NA	29 *	± 20	Quadratic
Oxychlordane	5.0	4.3		1.23	1.07	-13	NA	± 20	AverageRF
cis-Nonachlor	5.0	4.4		1.42	1.24	-13	NA	± 20	AverageRF
trans-Nonachlor	5.0	4.6		1.28	1.18	-8	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB-35MS

File ID: J:\GC23\DATA\030818\0308F002.D\0308F002C.D
 J:\GC23\DATA\030818\0308F003.D\0308F003C.D
 J:\GC23\DATA\030818\0308F004.D\0308F004C.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.1		1.20	1.27	6	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		1.01	1.05	4	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.2		1.37	1.52	11	NA	± 20	AverageRF
Heptachlor	2.0	2.1		1.36	1.44	6	NA	± 20	AverageRF
Aldrin	2.0	2.2		1.39	1.54	11	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.2		1.29	1.40	9	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.3		1.26	1.45	14	NA	± 20	AverageRF
Dieldrin	2.0	2.2		1.30	1.40	8	NA	± 20	AverageRF
4,4'-DDE	2.0	2.3		1.23	1.39	13	NA	± 20	AverageRF
4,4'-DDD	2.0	2.2		1.03	1.13	10	NA	± 20	AverageRF
4,4'-DDT	2.0	2.3		0.909	1.02	13	NA	± 20	AverageRF
2,4'-DDE	2.0	2.3		0.919	1.04	13	NA	± 20	AverageRF
2,4'-DDD	2.0	2.4		0.713	0.843	18	NA	± 20	AverageRF
2,4'-DDT	2.0	2.7		0.850	0.945	NA	36 *	± 20	Quadratic
Oxychlordane	5.0	4.8		1.27	1.22	-4	NA	± 20	AverageRF
cis-Nonachlor	5.0	4.7		1.50	1.40	-6	NA	± 20	AverageRF
trans-Nonachlor	5.0	4.8		1.38	1.33	-4	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018 - 03/09/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB XLB

File ID: J:\GC23\DATA\030818\0308F027.D
 J:\GC23\DATA\030818\0308F029.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.1		1.16	1.24	7	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		0.662	0.690	4	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.3		1.39	1.58	14	NA	± 20	AverageRF
Heptachlor	2.0	2.0		1.19	1.20	1	NA	± 20	AverageRF
Aldrin	2.0	2.2		1.31	1.44	10	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.2		1.20	1.30	8	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.15	1.27	10	NA	± 20	AverageRF
Dieldrin	2.0	2.2		1.23	1.33	8	NA	± 20	AverageRF
4,4'-DDE	2.0	2.1		1.20	1.26	6	NA	± 20	AverageRF
4,4'-DDD	2.0	2.2		1.01	1.06	NA	11	± 20	Quadratic
4,4'-DDT	2.0	2.0		0.884	0.873	-1	NA	± 20	AverageRF
Oxychlordane	5.0	4.5		1.23	1.10	-11	NA	± 20	AverageRF
cis-Nonachlor	5.0	4.4		1.42	1.25	-12	NA	± 20	AverageRF
trans-Nonachlor	5.0	4.5		1.28	1.17	-9	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/08/2018 - 03/09/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB-35MS

File ID: J:\GC23\DATA\030818\0308F027.D\0308F027C.D
 J:\GC23\DATA\030818\0308F029.D\0308F029C.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.0		1.20	1.23	2	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.0		1.01	1.01	0	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.2		1.37	1.51	10	NA	± 20	AverageRF
Heptachlor	2.0	2.0		1.36	1.39	2	NA	± 20	AverageRF
Aldrin	2.0	2.1		1.39	1.48	6	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.2		1.29	1.39	8	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.26	1.38	9	NA	± 20	AverageRF
Dieldrin	2.0	2.1		1.30	1.38	6	NA	± 20	AverageRF
4,4'-DDE	2.0	2.2		1.23	1.35	10	NA	± 20	AverageRF
4,4'-DDD	2.0	2.1		1.03	1.09	6	NA	± 20	AverageRF
4,4'-DDT	2.0	2.0		0.909	0.908	0	NA	± 20	AverageRF
Oxychlordane	5.0	4.8		1.27	1.21	-5	NA	± 20	AverageRF
cis-Nonachlor	5.0	4.6		1.50	1.39	-7	NA	± 20	AverageRF
trans-Nonachlor	5.0	4.8		1.38	1.31	-5	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB XLB

File ID: J:\GC23\DATA\030818\0308F044.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.1		1.16	1.23	6	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		0.662	0.705	6	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.2		1.39	1.53	11	NA	± 20	AverageRF
Heptachlor	2.0	2.1		1.19	1.22	3	NA	± 20	AverageRF
Aldrin	2.0	2.2		1.31	1.43	9	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.2		1.20	1.29	8	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.15	1.25	8	NA	± 20	AverageRF
Dieldrin	2.0	2.1		1.23	1.30	5	NA	± 20	AverageRF
4,4'-DDE	2.0	2.1		1.20	1.24	4	NA	± 20	AverageRF
4,4'-DDD	2.0	2.2		1.01	1.06	NA	11	± 20	Quadratic
4,4'-DDT	2.0	2.0		0.884	0.869	-2	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/09/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801351
Units: ug/L
Column ID: DB-35MS

File ID: J:\GC23\DATA\030818\0308F044.D\0308F044C.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.0		1.20	1.23	2	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		1.01	1.04	3	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.2		1.37	1.51	10	NA	± 20	AverageRF
Heptachlor	2.0	2.1		1.36	1.43	6	NA	± 20	AverageRF
Aldrin	2.0	2.1		1.39	1.46	5	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.1		1.29	1.38	7	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.26	1.38	9	NA	± 20	AverageRF
Dieldrin	2.0	2.1		1.30	1.39	7	NA	± 20	AverageRF
4,4'-DDE	2.0	2.2		1.23	1.37	12	NA	± 20	AverageRF
4,4'-DDD	2.0	2.1		1.03	1.08	5	NA	± 20	AverageRF
4,4'-DDT	2.0	2.2		0.909	0.986	9	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018

Continuing Calibration Verification Summary
Organochlorine Pesticides

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801701
Units: ug/L
Column ID: DB XLB

File ID: J:\GC23\DATA\032918\0329F002.D
 J:\GC23\DATA\032918\0329F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit	
Tetrachloro-m-xylene	2.0	2.2		1.16	1.27	10	NA	± 20	AverageRF	
Decachlorobiphenyl	2.0	2.1		0.662	0.694	5	NA	± 20	AverageRF	
gamma-BHC (Lindane)	2.0	2.1		1.39	1.45	4	NA	± 20	AverageRF	
Heptachlor	2.0	1.8		1.19	1.07	-10	NA	± 20	AverageRF	
Aldrin	2.0	2.2		1.31	1.47	12	NA	± 20	AverageRF	
gamma-Chlordane	2.0	2.1		1.20	1.26	5	NA	± 20	AverageRF	
alpha-Chlordane	2.0	2.2		1.15	1.23	8	NA	± 20	AverageRF	
Dieldrin	2.0	2.1		1.23	1.31	6	NA	± 20	AverageRF	
4,4'-DDE	2.0	2.1		1.20	1.25	5	NA	± 20	AverageRF	
4,4'-DDD	2.0	2.0		1.01	0.962	NA	0	± 20	Quadratic	
4,4'-DDT	2.0	1.6		0.884	0.692	-22	*	± 20	AverageRF	
2,4'-DDE	2.0	2.4		0.875	0.974	NA	20	± 20	Quadratic	
2,4'-DDD	2.0	2.6		0.732	0.811	NA	31	*	± 20	Quadratic
2,4'-DDT	2.0	2.3		0.811	0.782	NA	14	± 20	Quadratic	

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446
Date Analyzed: 03/29/2018

**Continuing Calibration Verification Summary
 Organochlorine Pesticides**

Calibration Type: Internal Standard
Analysis Method: 8081B

Calibration Date: 04/09/2017
Calibration ID: CAL15707
Analysis Lot: KWG1801701
Units: ug/L
Column ID: DB-35MS

File ID: J:\GC23\DATA\032918\0329F002.D\0329F002C.D
 J:\GC23\DATA\032918\0329F003.D\0329F003C.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Tetrachloro-m-xylene	2.0	2.1		1.20	1.26	5	NA	± 20	AverageRF
Decachlorobiphenyl	2.0	2.1		1.01	1.04	3	NA	± 20	AverageRF
gamma-BHC (Lindane)	2.0	2.1		1.37	1.45	6	NA	± 20	AverageRF
Heptachlor	2.0	2.0		1.36	1.35	-1	NA	± 20	AverageRF
Aldrin	2.0	2.1		1.39	1.49	7	NA	± 20	AverageRF
gamma-Chlordane	2.0	2.1		1.29	1.35	5	NA	± 20	AverageRF
alpha-Chlordane	2.0	2.2		1.26	1.37	8	NA	± 20	AverageRF
Dieldrin	2.0	2.1		1.30	1.36	4	NA	± 20	AverageRF
4,4'-DDE	2.0	2.2		1.23	1.34	9	NA	± 20	AverageRF
4,4'-DDD	2.0	1.9		1.03	0.987	-4	NA	± 20	AverageRF
4,4'-DDT	2.0	1.9		0.909	0.861	-5	NA	± 20	AverageRF
2,4'-DDE	2.0	2.2		0.919	1.02	11	NA	± 20	AverageRF
2,4'-DDD	2.0	2.5		0.713	0.889	25 *	NA	± 20	AverageRF
2,4'-DDT	2.0	2.5		0.850	0.876	NA	26 *	± 20	Quadratic

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

Analysis Run Log
Organochlorine Pesticides

Analysis Method: 8081B

Analysis Lot: KWG1801351
Instrument ID: GC23
Column: DB XLB

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0308F001.D	Performance Evaluation Mixture	KWG1801351-2	3/8/2018	07:28		3/8/2018	07:50
0308F002.D	Continuing Calibration Verification	KWG1801351-3	3/8/2018	07:57		3/8/2018	08:19
0308F003.D	Continuing Calibration Verification	KWG1801351-3	3/8/2018	08:27		3/8/2018	08:49
0308F004.D	Continuing Calibration Verification	KWG1801351-3	3/8/2018	08:56		3/8/2018	09:18
0308F005.D	Instrument Blank	KWG1801351-1	3/8/2018	09:26		3/8/2018	09:48
0308F006.D	SED-1	K1801446-001	3/8/2018	09:56		3/8/2018	10:18
0308F007.D	SED-2	K1801446-002	3/8/2018	10:26		3/8/2018	10:48
0308F008.D	SED-3	K1801446-003	3/8/2018	10:56		3/8/2018	11:18
0308F010.D	SED-5	K1801446-005	3/8/2018	14:08		3/8/2018	14:30
0308F011.D	SED-6	K1801446-006	3/8/2018	14:38		3/8/2018	15:00
0308F012.D	SED-7	K1801446-007	3/8/2018	15:08		3/8/2018	15:30
0308FX09.D	SED-4	K1801446-004	3/8/2018	15:37		3/8/2018	15:59
0308F013.D	SED-8	K1801446-008	3/8/2018	16:07		3/8/2018	16:29
0308F014.D	SED-9	K1801446-009	3/8/2018	16:36		3/8/2018	16:58
0308F015.D	SED-10	K1801446-010	3/8/2018	17:06		3/8/2018	17:28
0308F016.D	SED-11	K1801446-011	3/8/2018	17:35		3/8/2018	17:57
0308F017.D	SED-12	K1801446-012	3/8/2018	18:05		3/8/2018	18:27
0308F018.D	SED-13	K1801446-013	3/8/2018	18:34		3/8/2018	18:56
0308F019.D	SED-6MS	KWG1801137-1	3/8/2018	19:04		3/8/2018	19:26
0308F020.D	SED-6DMS	KWG1801137-2	3/8/2018	19:34		3/8/2018	19:56
0308F021.D	SED-6MS	KWG1801137-1	3/8/2018	20:04		3/8/2018	20:26
0308F023.D	Lab Control Sample	KWG1801137-7	3/8/2018	21:04		3/8/2018	21:26
0308F024.D	Lab Control Sample	KWG1801137-7	3/8/2018	21:34		3/8/2018	21:56
0308F025.D	Method Blank	KWG1801137-10	3/8/2018	22:03		3/8/2018	22:25
0308F026.D	Performance Evaluation Mixture	KWG1801351-5	3/8/2018	22:33		3/8/2018	22:55
0308F027.D	Continuing Calibration Verification	KWG1801351-6	3/8/2018	23:03		3/8/2018	23:25
0308F028.D	Continuing Calibration Verification	KWG1801351-6	3/8/2018	23:33		3/8/2018	23:55
0308F029.D	Continuing Calibration Verification	KWG1801351-6	3/9/2018	00:03		3/9/2018	00:25
0308F030.D	Instrument Blank	KWG1801351-4	3/9/2018	00:32		3/9/2018	00:54
0308F031.D	ZZZZZZ	ZZZZZZ	3/9/2018	01:01		3/9/2018	01:23
0308F032.D	ZZZZZZ	ZZZZZZ	3/9/2018	01:31		3/9/2018	01:53
0308F033.D	ZZZZZZ	ZZZZZZ	3/9/2018	02:00		3/9/2018	02:22
0308F034.D	ZZZZZZ	ZZZZZZ	3/9/2018	02:31		3/9/2018	02:53
0308F035.D	ZZZZZZ	ZZZZZZ	3/9/2018	03:00		3/9/2018	03:22
0308F036.D	ZZZZZZ	ZZZZZZ	3/9/2018	03:30		3/9/2018	03:52

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

**Analysis Run Log
 Organochlorine Pesticides**

Analysis Method: 8081B

Analysis Lot: KWG1801351
Instrument ID: GC23
Column: DB XLB

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0308F037.D	ZZZZZZ	ZZZZZZ	3/9/2018	03:59		3/9/2018	04:21
0308F038.D	ZZZZZZ	ZZZZZZ	3/9/2018	04:28		3/9/2018	04:50
0308F039.D	ZZZZZZ	ZZZZZZ	3/9/2018	04:57		3/9/2018	05:19
0308F040.D	ZZZZZZ	ZZZZZZ	3/9/2018	05:26		3/9/2018	05:48
0308F041.D	ZZZZZZ	ZZZZZZ	3/9/2018	05:56		3/9/2018	06:18
0308F042.D	ZZZZZZ	ZZZZZZ	3/9/2018	06:25		3/9/2018	06:47
0308F043.D	Performance Evaluation Mixture	KWG1801351-8	3/9/2018	06:54		3/9/2018	07:16
0308F044.D	Continuing Calibration Verification	KWG1801351-9	3/9/2018	07:23		3/9/2018	07:45
0308F045.D	Continuing Calibration Verification	KWG1801351-9	3/9/2018	07:52		3/9/2018	08:14
0308F046.D	Instrument Blank	KWG1801351-7	3/9/2018	08:21		3/9/2018	08:43
0308F047.D	ZZZZZZ	ZZZZZZ	3/9/2018	08:51		3/9/2018	09:13
0308F048.D	ZZZZZZ	ZZZZZZ	3/9/2018	09:20		3/9/2018	09:42
0308F049.D	ZZZZZZ	ZZZZZZ	3/9/2018	09:49		3/9/2018	10:11
0308F050.D	ZZZZZZ	ZZZZZZ	3/9/2018	10:18		3/9/2018	10:40
0308F051.D	ZZZZZZ	ZZZZZZ	3/9/2018	10:47		3/9/2018	11:09
0308F052.D	ZZZZZZ	ZZZZZZ	3/9/2018	11:17		3/9/2018	11:39
0308F053.D	ZZZZZZ	ZZZZZZ	3/9/2018	11:46		3/9/2018	12:08
0308F054.D	ZZZZZZ	ZZZZZZ	3/9/2018	12:16		3/9/2018	12:38
0308F055.D	ZZZZZZ	ZZZZZZ	3/9/2018	12:45		3/9/2018	13:07
0308F056.D	ZZZZZZ	ZZZZZZ	3/9/2018	13:14		3/9/2018	13:36
0308F057.D	ZZZZZZ	ZZZZZZ	3/9/2018	13:43		3/9/2018	14:05

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment

Service Request: K1801446

**Analysis Run Log
 Organochlorine Pesticides**

Analysis Method: 8081B

Analysis Lot: KWG1801701
Instrument ID: GC23
Column: DB XLB

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0329F001.D	Performance Evaluation Mixture	KWG1801701-2	3/29/2018	10:16		3/29/2018	10:38
0329F002.D	Continuing Calibration Verification	KWG1801701-3	3/29/2018	10:45		3/29/2018	11:07
0329F003.D	Continuing Calibration Verification	KWG1801701-3	3/29/2018	11:15		3/29/2018	11:37
0329F004.D	Instrument Blank	KWG1801701-1	3/29/2018	11:44		3/29/2018	12:06
0329F005.D	SED-6DMS	KWG1801137-2	3/29/2018	12:13		3/29/2018	12:35

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Extracted: 02/26/2018

Extraction Prep Log
Organochlorine Pesticides

Extraction Method: EPA 3546
Analysis Method: 8081B

Extraction Lot: KWG1801137
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
SED-1	K1801446-001	02/12/18	02/14/18	2.233g	10mL	47.3	
SED-2	K1801446-002	02/12/18	02/14/18	2.288g	10mL	56.3	
SED-3	K1801446-003	02/12/18	02/14/18	2.146g	10mL	42.1	
SED-4	K1801446-004	02/12/18	02/14/18	2.362g	10mL	48.5	
SED-5	K1801446-005	02/12/18	02/14/18	2.382g	10mL	37.5	
SED-6	K1801446-006	02/12/18	02/14/18	2.243g	10mL	37.4	
SED-7	K1801446-007	02/12/18	02/14/18	2.312g	10mL	66	
SED-8	K1801446-008	02/12/18	02/14/18	2.473g	10mL	48.7	
SED-9	K1801446-009	02/12/18	02/14/18	2.412g	10mL	37.5	
SED-10	K1801446-010	02/12/18	02/14/18	2.367g	10mL	71.8	
SED-11	K1801446-011	02/12/18	02/14/18	2.418g	10mL	52.9	
SED-12	K1801446-012	02/12/18	02/14/18	2.342g	10mL	64	
SED-13	K1801446-013	02/12/18	02/14/18	2.378g	10mL	75.6	
Method Blank	KWG1801137-10	NA	NA	2.473g	10mL	NA	
SED-6MS	KWG1801137-1	02/12/18	02/14/18	2.235g	10mL	37.4	
SED-6MS	KWG1801137-1	02/12/18	02/14/18	2.268g	10mL	37.4	
SED-6DMS	KWG1801137-2	02/12/18	02/14/18	2.260g	10mL	37.4	
Lab Control Sample	KWG1801137-7	NA	NA	2.000g	10mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-1
Lab Code: K1801446-001
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	1.9	0.59	1.7	3.0	55.3	JP	1	03/08/18
Oxychlorane	1.9	0.48	2.8	3.8	30.3		1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-3
Lab Code: K1801446-003
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	2.3	0.69	1.8	3.1	53.1	JP	1	03/08/18
Dieldrin	2.3	0.49	0.75	1.7	77.6	JP	1	03/08/18
Oxychlorane	2.3	0.56	5.3	6.1	14.0		1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-5
Lab Code: K1801446-005
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	2.3	0.70	2.6	4.3	49.3	P	1	03/08/18
Dieldrin	2.3	0.50	1.9	2.0	5.1	J	1	03/08/18
2,4'-DDD	2.3	0.61	2.1	2.2	4.7	J	1	03/08/18
Oxychlordan	2.3	0.56	4.9	7.8	45.7	P	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-7
Lab Code: K1801446-007
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
2,4'-DDT	1.4	0.63	1.2	2.2	58.8	JP	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-9
Lab Code: K1801446-009
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Dieldrin	2.3	0.49	5.3	7.1	29.0		1	03/08/18
4,4'-DDE	2.3	0.89	1.0	2.8	94.7	JP	1	03/08/18
4,4'-DDD	2.3	1.4	4.1	10	83.7	P	1	03/08/18
2,4'-DDD	2.3	0.60	6.7	13	64.0	P	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-10
Lab Code: K1801446-010
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	1.2	0.37	0.72	1.2	50.0	JP	1	03/08/18
4,4'-DDD	1.2	0.71	19	23	19.0		1	03/08/18
cis-Nonachlor	1.2	0.35	7.5	16	72.3	P	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-11
Lab Code: K1801446-011
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	1.6	0.49	0.59	1.4	81.4	JP	1	03/08/18
4,4'-DDE	1.6	0.63	2.5	3.6	36.1		1	03/08/18
4,4'-DDD	1.6	0.94	5.7	12	71.2	P	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-12
Lab Code: K1801446-012
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
alpha-Chlordane	1.4	0.55	1.1	1.5	30.8	J	1	03/08/18
Dieldrin	1.4	0.30	1.6	2.1	27.0		1	03/08/18
4,4'-DDE	1.4	0.54	0.85	1.1	25.6	J	1	03/08/18

Confirmation Results

Client: Whatcom Environmental Services Inc.
Project: Jensen Shipyard Sediment
Sample Matrix: Sediment

Service Request: K1801446
Date Collected: 02/12/2018
Date Received: 02/14/2018
Date Extracted: 02/26/2018

Organochlorine Pesticides

Sample Name: SED-13
Lab Code: K1801446-013
Extraction Method: EPA 3546
Analysis Method: 8081B

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
gamma-BHC (Lindane)	1.2	0.35	0.84	2.4	96.3	JP	1	03/08/18
4,4'-DDE	1.2	0.45	4.0	12	100.0	P	1	03/08/18
4,4'-DDD	1.2	0.67	36	38	5.4		1	03/08/18
cis-Nonachlor	1.2	0.33	12	14	15.4		1	03/08/18