ANALYTICAL REPORT

Lab Number:	L1625234
Client:	Floyd Snider Inc 601 Union Street Suite 600 Seattle, WA 98101
ATTN:	Teri Floyd
Phone:	(206) 292-2078
Project Name:	LDW/AC PILOT STUDY
Project Number:	LY15160310
Report Date:	09/12/16

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Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1625234-01	LDW-BA-PC-ENRMAT-SAND	SEDIMENT	LDW	08/10/16 10:30	08/11/16
L1625234-02	LDW-BA-PC-ENRMAT-GRAVSAND	SEDIMENT	LDW	08/10/16 10:45	08/11/16

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234
Project Number: LY15160310 **Report Date:** 09/12/16

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	LDW/AC PILOT STUDY	**Lab Number:**	L1625234
Project Number:	LY15160310	**Report Date:**	09/12/16

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L1625234-01 and -02 were frozen upon receipt to arrest sample holding time.

Metals

The WG925955-3 Laboratory Duplicate RPD, performed on L1625234-01, is outside the acceptance criteria for Silver (24%). The elevated RPD has been attributed to the non-homogeneous nature of the native sample.
The WG925963-4/-5 MS/MSD RPD for Mercury (26%), performed on L1625234-01, is above the acceptance criteria.
The WG925963-6/-7 MS/MSD RPD for Mercury (21%), performed on L1625234-02, is above the acceptance criteria.

Soot

The WG927380-3 Laboratory Duplicate RPD, performed on L1625234-01, is above the acceptance criteria for % Soot (Rep 1) (96%) and % Soot (Rep 2) (84%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.
The WG927380-4/-5 MS/MSD RPD for %Soot (Rep 1) (47%), performed on L1625234-01, is above the acceptance criteria.

Total Organic Carbon

The WG927320-3 Laboratory Duplicate RPD, performed on L1625234-01, is above the acceptance criteria for Total Organic Carbon (Rep2) (27%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.
The WG927320-4/-5 MS/MSD RPD for Total Organic Carbon (Rep2) (39%), performed on L1625234-01, is above the acceptance criteria.

Project Name:	LDW/AC PILOT STUDY	**Lab Number:**	L1625234
Project Number:	LY15160310	**Report Date:**	09/12/16

Case Narrative (continued)

Grain Size Analysis

The WG929977-1 Laboratory Duplicate RPDs, performed on L1625234-01, are outside the acceptance criteria for % Silt Fine (21%), and % Total Fines (32%). The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/12/16

ORGANICS

SEMIVOLATILES

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

SAMPLE RESULTS

Lab ID:	L1625234-01	Date Collected:	08/10/16 10:30
Client ID:	LDW-BA-PC-ENRMAT-SAND	Date Received:	08/11/16
Sample Location:	LDW	Field Prep:	Not Specified
Matrix:	Sediment	Extraction Method:	EPA 3570
Analytical Method:	1,8270D	Extraction Date:	09/07/16 07:06
Analytical Date:	09/09/16 22:17		
Analyst:	ML		
Percent Solids:	96%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Phenol	ND		ug/kg	34.1	3.24	1
1,4-Dichlorobenzene	ND		ug/kg	34.1	7.09	1
1,2-Dichlorobenzene	ND		ug/kg	34.1	7.43	1
Benzyl alcohol	ND		ug/kg	68.2	22.6	1
4-Methylphenol	ND		ug/kg	34.1	4.46	1
2,4-Dimethylphenol	ND		ug/kg	34.1	5.62	1
Benzoic acid	ND		ug/kg	2040	433.	1
1,2,4-Trichlorobenzene	ND		ug/kg	34.1	2.10	1
Naphthalene	ND		ug/kg	34.1	2.29	1
2-Methylnaphthalene	ND		ug/kg	34.1	2.68	1
Dimethylphthalate	ND		ug/kg	34.1	2.66	1
Acenaphthene	ND		ug/kg	34.1	3.41	1
Dibenzofuran	ND		ug/kg	34.1	2.55	1
Fluorene	ND		ug/kg	34.1	2.52	1
n-Nitrosodiphenylamine	ND		ug/kg	34.1	2.39	1
Hexachlorobenzene	ND		ug/kg	34.1	3.32	1
Pentachlorophenol	ND		ug/kg	204	61.3	1
Phenanthrene	ND		ug/kg	34.1	2.17	1
Anthracene	ND		ug/kg	34.1	1.74	1
Fluoranthene	ND		ug/kg	34.1	2.94	1
Pyrene	ND		ug/kg	34.1	2.81	1
Butylbenzylphthalate	ND		ug/kg	34.1	6.88	1
Benz(a)anthracene	ND		ug/kg	34.1	1.98	1
Chrysene	ND		ug/kg	34.1	2.38	1
bis(2-Ethylhexyl)phthalate	ND		ug/kg	34.1	8.93	1
Benzo(b)fluoranthene	ND		ug/kg	34.1	2.98	1
Benzo(k)fluoranthene	ND		ug/kg	34.1	2.60	1
Benzo(a)pyrene	ND		ug/kg	34.1	2.46	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	34.1	2.81	1
Dibenz(a,h)anthracene	ND		ug/kg	34.1	3.53	1

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-01 Date Collected: 08/10/16 10:30

Client ID: LDW-BA-PC-ENRMAT-SAND Date Received: 08/11/16

Sample Location: LDW Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzo(g,h,i)perylene	ND		ug/kg	34.1	2.64	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	73		30-130
Phenol-d5	68		30-130
Nitrobenzene-d5	67		30-130
2-Fluorophenol	62		30-130
2,4,6-Tribromophenol	88		30-130
Terphenyl-d14	108		30-130

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

SAMPLE RESULTS

Lab ID:	L1625234-02	Date Collected:	08/10/16 10:45
Client ID:	LDW-BA-PC-ENRMAT-GRAVSAND	Date Received:	08/11/16
Sample Location:	LDW	Field Prep:	Not Specified
Matrix:	Sediment	Extraction Method:	EPA 3570
Analytical Method:	1,8270D	Extraction Date:	09/07/16 07:06
Analytical Date:	09/10/16 00:19		
Analyst:	ML		
Percent Solids:	97%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Phenol	ND		ug/kg	34.0	3.23	1
1,4-Dichlorobenzene	ND		ug/kg	34.0	7.08	1
1,2-Dichlorobenzene	ND		ug/kg	34.0	7.42	1
Benzyl alcohol	ND		ug/kg	68.1	22.6	1
4-Methylphenol	ND		ug/kg	34.0	4.45	1
2,4-Dimethylphenol	ND		ug/kg	34.0	5.61	1
Benzoic acid	ND		ug/kg	2040	432.	1
1,2,4-Trichlorobenzene	ND		ug/kg	34.0	2.10	1
Naphthalene	ND		ug/kg	34.0	2.29	1
2-Methylnaphthalene	ND		ug/kg	34.0	2.68	1
Dimethylphthalate	ND		ug/kg	34.0	2.66	1
Acenaphthene	ND		ug/kg	34.0	3.40	1
Dibenzofuran	ND		ug/kg	34.0	2.55	1
Fluorene	ND		ug/kg	34.0	2.52	1
n-Nitrosodiphenylamine	ND		ug/kg	34.0	2.39	1
Hexachlorobenzene	ND		ug/kg	34.0	3.32	1
Pentachlorophenol	ND		ug/kg	204	61.2	1
Phenanthrene	ND		ug/kg	34.0	2.16	1
Anthracene	ND		ug/kg	34.0	1.74	1
Fluoranthene	ND		ug/kg	34.0	2.93	1
Pyrene	ND		ug/kg	34.0	2.81	1
Butylbenzylphthalate	ND		ug/kg	34.0	6.88	1
Benz(a)anthracene	ND		ug/kg	34.0	1.97	1
Chrysene	ND		ug/kg	34.0	2.38	1
bis(2-Ethylhexyl)phthalate	ND		ug/kg	34.0	8.92	1
Benzo(b)fluoranthene	ND		ug/kg	34.0	2.98	1
Benzo(k)fluoranthene	ND		ug/kg	34.0	2.59	1
Benzo(a)pyrene	ND		ug/kg	34.0	2.46	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	34.0	2.80	1
Dibenz(a,h)anthracene	ND		ug/kg	34.0	3.53	1

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-02 Date Collected: 08/10/16 10:45

Client ID: LDW-BA-PC-ENRMAT-GRAVSAND Date Received: 08/11/16

Sample Location: LDW Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzo(g,h,i)perylene	ND		ug/kg	34.0	2.64	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	76		30-130
Phenol-d5	73		30-130
Nitrobenzene-d5	70		30-130
2-Fluorophenol	62		30-130
2,4,6-Tribromophenol	96		30-130
Terphenyl-d14	101		30-130

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/09/16 16:08
Analyst: ML

Extraction Method: EPA 3570
Extraction Date: 09/07/16 07:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Mansfield Lab for sample(s): 01-02 Batch: WG929407-1					
Phenol	ND		ug/kg	33.3	3.17
1,4-Dichlorobenzene	ND		ug/kg	33.3	6.93
1,2-Dichlorobenzene	ND		ug/kg	33.3	7.27
Benzyl alcohol	ND		ug/kg	66.7	22.1
4-Methylphenol	ND		ug/kg	33.3	4.36
2,4-Dimethylphenol	ND		ug/kg	33.3	5.49
Benzoic acid	ND		ug/kg	2000	423.
1,2,4-Trichlorobenzene	ND		ug/kg	33.3	2.06
Naphthalene	ND		ug/kg	33.3	2.24
2-Methylnaphthalene	ND		ug/kg	33.3	2.62
Dimethylphthalate	ND		ug/kg	33.3	2.60
Acenaphthene	ND		ug/kg	33.3	3.33
Dibenzofuran	ND		ug/kg	33.3	2.49
Fluorene	ND		ug/kg	33.3	2.47
n-Nitrosodiphenylamine	ND		ug/kg	33.3	2.34
Hexachlorobenzene	ND		ug/kg	33.3	3.25
Pentachlorophenol	ND		ug/kg	200	59.9
Phenanthrene	ND		ug/kg	33.3	2.12
Anthracene	ND		ug/kg	33.3	1.70
Fluoranthene	ND		ug/kg	33.3	2.87
Pyrene	ND		ug/kg	33.3	2.75
Butylbenzylphthalate	ND		ug/kg	33.3	6.73
Benz(a)anthracene	ND		ug/kg	33.3	1.93
Chrysene	ND		ug/kg	33.3	2.33
bis(2-Ethylhexyl)phthalate	ND		ug/kg	33.3	8.73
Benzo(b)fluoranthene	ND		ug/kg	33.3	2.92
Benzo(k)fluoranthene	ND		ug/kg	33.3	2.54
Benzo(a)pyrene	ND		ug/kg	33.3	2.41
Indeno(1,2,3-cd)pyrene	ND		ug/kg	33.3	2.75

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/09/16 16:08
Analyst: ML

Extraction Method: EPA 3570
Extraction Date: 09/07/16 07:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Mansfield Lab for sample(s): 01-02 Batch: WG929407-1					
Dibenz(a,h)anthracene	ND		ug/kg	33.3	3.45
Benzo(g,h,i)perylene	ND		ug/kg	33.3	2.59

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	61		30-130
Phenol-d5	60		30-130
Nitrobenzene-d5	58		30-130
2-Fluorophenol	55		30-130
2,4,6-Tribromophenol	78		30-130
Terphenyl-d14	100		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG929407-2 WG929407-3								
n-Nitrosodimethylamine	75		74		40-140	1		30
Pyridine	81		81		40-140	0		30
Benzaldehyde	58		52		40-140	11		30
Aniline	70		64		40-140	9		30
Bis(2-chloroethyl)ether	69		64		40-140	8		30
Phenol	75		69		30-130	8		30
2-Chlorophenol	70		66		30-130	6		30
1,3-Dichlorobenzene	66		66		40-140	0		30
1,4-Dichlorobenzene	65		66		40-140	2		30
1,2-Dichlorobenzene	67		67		40-140	0		30
Bis(2-chloroisopropyl)ether	69		64		40-140	8		30
2-Methylphenol	74		68		30-130	8		30
Acetophenone	68		62		40-140	9		30
Hexachloroethane	64		64		40-140	0		30
N-Nitroso-di-n-propylamine	78		70		40-140	11		30
4-Methylphenol	77		72		30-130	7		30
Nitrobenzene	72		67		40-140	7		30
Isophorone	86		79		40-140	8		30
2-Nitrophenol	76		70		30-130	8		30
2,4-Dimethylphenol	69		62		30-130	11		30
Benzoic Acid	**20**	Q	**21**	Q	40-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG929407-2 WG929407-3								
Bis(2-chloroethoxy)methane	79		72		40-140	9		30
2,4-Dichlorophenol	80		74		30-130	8		30
1,2,4-Trichlorobenzene	70		66		40-140	6		30
Naphthalene	71		66		40-140	7		30
4-Chloroaniline	81		74		40-140	9		30
Hexachlorobutadiene	69		65		40-140	6		30
Caprolactam	102		111		40-140	8		30
P-Chloro-M-Cresol	87		86		30-130	1		30
2-Methylnaphthalene	76		71		40-140	7		30
1,2,4,5-Tetrachlorobenzene	78		72		40-140	8		30
Hexachlorocyclopentadiene	62		53		40-140	16		30
2,4,6-Trichlorophenol	86		81		30-130	6		30
2,4,5-Trichlorophenol	94		96		30-130	2		30
Biphenyl	74		71		40-140	4		30
2-Chloronaphthalene	80		74		40-140	8		30
2-Nitroaniline	91		90		40-140	1		30
Acenaphthylene	83		80		40-140	4		30
Dimethylphthalate	94		94		40-140	0		30
2,6-Dinitrotoluene	95		97		40-140	2		30
Acenaphthene	83		80		40-140	4		30
3-Nitroaniline	93		97		40-140	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
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Lab Number: L1625234
Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG929407-2 WG929407-3								
2,4-Dinitrophenol	78		79		30-130	1		30
Dibenzofuran	88		85		40-140	3		30
2,3,4,6-Tetrachlorophenol	101		105		30-130	4		30
2,4-Dinitrotoluene	97		106		40-140	9		30
4-Nitrophenol	93		104		30-130	11		30
Fluorene	89		88		40-140	1		30
4-Chlorophenyl phenyl ether	90		89		40-140	1		30
Diethylphthalate	92		100		40-140	8		30
4-Nitroaniline	101		106		40-140	5		30
4,6-Dinitro-2-Methylphenol	93		99		30-130	6		30
Azobenzene	93		95		40-140	2		30
NitrosoDiPhenylAmine(NDPA)/DPA	99		102		40-140	3		30
4-Bromophenyl phenyl ether	94		96		40-140	2		30
Hexachlorobenzene	94		96		40-140	2		30
Atrazine	85		88		40-140	3		30
Pentachlorophenol	83		100		30-130	19		30
Phenanthrene	96		96		40-140	0		30
Anthracene	92		95		40-140	3		30
Carbazole	99		106		40-140	7		30
Di-n-butylphthalate	101		106		40-140	5		30
Fluoranthene	97		102		40-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG929407-2 WG929407-3								
Benzidine	48		52		40-140	8		30
Pyrene	98		103		40-140	5		30
Butylbenzylphthalate	105		113		40-140	7		30
3,3'-Dichlorobenzidine	87		98		40-140	12		30
Benz(a)anthracene	97		105		40-140	8		30
Chrysene	103		107		40-140	4		30
Bis(2-Ethylhexyl)phthalate	106		113		40-140	6		30
Di-n-octylphthalate	104		106		40-140	2		30
Benzo(b)fluoranthene	97		104		40-140	7		30
Benzo(k)fluoranthene	108		108		40-140	0		30
Benzo(a)pyrene	99		102		40-140	3		30
Indeno(1,2,3-cd)Pyrene	99		104		40-140	5		30
Dibenz(a,h)anthracene	105		110		40-140	5		30
Benzo(ghi)perylene	102		105		40-140	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310
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Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 Batch: WG929407-2 WG929407-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorobiphenyl	78		72		30-130
Phenol-d5	72		66		30-130
Nitrobenzene-d5	70		66		30-130
2-Fluorophenol	64		63		30-130
2,4,6-Tribromophenol	103		105		30-130
Terphenyl-d14	100		104		30-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-5 WG929407-6 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
n-Nitrosodimethylamine	ND	693	492	71		521	75		40-140	6		30
Pyridine	ND	554	366	66		378	68		40-140	3		30
Benzaldehyde	ND	693	341	49		389	56		40-140	13		30
Aniline	ND	693	409	59		468	68		40-140	13		30
Bis(2-chloroethyl)ether	ND	693	427	62		486	70		40-140	13		30
Phenol	ND	693	463	67		520	75		30-130	12		30
2-Chlorophenol	ND	693	438	63		487	70		30-130	11		30
1,3-Dichlorobenzene	ND	693	436	63		461	67		40-140	6		30
1,4-Dichlorobenzene	ND	693	434	63		464	67		40-140	7		30
1,2-Dichlorobenzene	ND	693	437	63		470	68		40-140	7		30
Bis(2-chloroisopropyl)ether	ND	693	431	62		494	71		40-140	14		30
2-Methylphenol	ND	693	460	66		518	75		30-130	12		30
Acetophenone	ND	693	425	61		484	70		40-140	13		30
Hexachloroethane	ND	693	420	61		450	65		40-140	7		30
N-Nitroso-di-n-propylamine	ND	693	494	71		559	81		40-140	12		30
4-Methylphenol	ND	693	480	69		535	77		30-130	11		30
Nitrobenzene	ND	693	452	65		519	75		40-140	14		30
Isophorone	ND	693	574	83		633	91		40-140	10		30
2-Nitrophenol	ND	693	480	69		556	80		30-130	15		30
2,4-Dimethylphenol	ND	693	397	57		447	65		30-130	12		30
Benzoic Acid	ND	3460	1960J	57		2260	65		40-140	14		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-5 WG929407-6 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
Bis(2-chloroethoxy)methane	ND	693	512	74		582	84		40-140	13		30
2,4-Dichlorophenol	ND	693	522	75		577	83		30-130	10		30
1,2,4-Trichlorobenzene	ND	693	443	64		496	72		40-140	11		30
Naphthalene	ND	693	448	65		504	73		40-140	12		30
4-Chloroaniline	ND	693	516	75		582	84		40-140	12		30
Hexachlorobutadiene	ND	693	423	61		488	70		40-140	14		30
Caprolactam	ND	693	729	105		795	115		40-140	9		30
P-Chloro-M-Cresol	ND	693	606	88		657	95		30-130	8		30
2-Methylnaphthalene	ND	693	502	73		557	80		40-140	10		30
1,2,4,5-Tetrachlorobenzene	ND	693	517	75		568	82		40-140	9		30
Hexachlorocyclopentadiene	ND	693	393	57		486	70		40-140	21		30
2,4,6-Trichlorophenol	ND	693	598	86		654	94		30-130	9		30
2,4,5-Trichlorophenol	ND	693	664	96		717	103		30-130	8		30
Biphenyl	ND	693	511	74		559	81		40-140	9		30
2-Chloronaphthalene	ND	693	539	78		585	84		40-140	8		30
2-Nitroaniline	ND	693	648	94		703	101		40-140	8		30
Acenaphthylene	ND	693	579	84		624	90		40-140	7		30
Dimethylphthalate	ND	693	677	98		712	103		40-140	5		30
2,6-Dinitrotoluene	ND	693	684	99		743	107		40-140	8		30
Acenaphthene	ND	693	583	84		624	90		40-140	7		30
3-Nitroaniline	ND	693	666	96		712	103		40-140	7		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-5 WG929407-6 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
2,4-Dinitrophenol	ND	693	615	89		678	98		30-130	10		30
Dibenzofuran	ND	693	614	89		654	94		40-140	6		30
2,3,4,6-Tetrachlorophenol	ND	693	741	107		801	115		30-130	8		30
2,4-Dinitrotoluene	ND	693	712	103		744	107		40-140	4		30
4-Nitrophenol	ND	693	710	103		695	100		30-130	2		30
Fluorene	ND	693	630	91		672	97		40-140	6		30
4-Chlorophenyl phenyl ether	ND	693	633	91		676	98		40-140	7		30
Diethylphthalate	ND	693	705	102		739	107		40-140	5		30
4-Nitroaniline	ND	693	718	104		763	110		40-140	6		30
4,6-Dinitro-2-Methylphenol	ND	693	682	99		737	106		30-130	8		30
Azobenzene	ND	693	675	98		738	106		40-140	9		30
NitrosoDiPhenylAmine(NDPA)/DPA	ND	693	699	101		769	111		40-140	10		30
4-Bromophenyl phenyl ether	ND	693	662	96		727	105		40-140	9		30
Hexachlorobenzene	ND	693	671	97		724	104		40-140	8		30
Atrazine	ND	693	616	89		666	96		40-140	8		30
Pentachlorophenol	ND	693	670	97		728	105		30-130	8		30
Phenanthrene	ND	693	678	98		727	105		40-140	7		30
Anthracene	ND	693	667	96		700	101		40-140	5		30
Carbazole	ND	693	725	105		739	107		40-140	2		30
Di-n-butylphthalate	ND	693	728	105		768	111		40-140	5		30
Fluoranthene	ND	693	697	101		736	106		40-140	5		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-5 WG929407-6 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
Benzidine	ND	1730	261J	**15**	Q	403.J	**23**	Q	40-140	**43**	Q	30
Pyrene	ND	693	710	103		733	106		40-140	3		30
Butylbenzylphthalate	ND	693	757	109		797	115		40-140	5		30
3,3'-Dichlorobenzidine	ND	693	601	87		630	91		40-140	5		30
Benz(a)anthracene	ND	693	704	102		724	104		40-140	3		30
Chrysene	ND	693	735	106		754	109		40-140	3		30
Bis(2-Ethylhexyl)phthalate	ND	693	763	110		788	114		40-140	3		30
Di-n-octylphthalate	ND	693	788	114		778	112		40-140	1		30
Benzo(b)fluoranthene	ND	693	713	103		714	103		40-140	0		30
Benzo(k)fluoranthene	ND	693	809	117		760	110		40-140	6		30
Benzo(a)pyrene	ND	693	720	104		719	104		40-140	0		30
Indeno(1,2,3-cd)Pyrene	ND	693	738	107		742	107		40-140	1		30
Dibenz(a,h)anthracene	ND	693	794	115		777	112		40-140	2		30
Benzo(ghi)perylene	ND	693	763	110		720	104		40-140	6		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	103		113		30-130
2-Fluorobiphenyl	74		81		30-130
2-Fluorophenol	59		63		30-130
Nitrobenzene-d5	63		72		30-130
Phenol-d5	64		72		30-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310
Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-5 WG929407-6 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Terphenyl-d14	101		102		30-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-7 WG929407-8 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
n-Nitrosodimethylamine	ND	676	389	58		304	45		40-140	25		30
Pyridine	ND	541	307	57		253	47		40-140	19		30
Benzaldehyde	ND	676	234	**35**	Q	183	**27**	Q	40-140	24		30
Aniline	ND	676	335	50		283	42		40-140	17		30
Bis(2-chloroethyl)ether	ND	676	340	50		275	41		40-140	21		30
Phenol	ND	676	389	58		322	48		30-130	19		30
2-Chlorophenol	ND	676	346	51		282	42		30-130	20		30
1,3-Dichlorobenzene	ND	676	340	50		269	**40**	Q	40-140	23		30
1,4-Dichlorobenzene	ND	676	341	50		272	40		40-140	23		30
1,2-Dichlorobenzene	ND	676	343	51		272	40		40-140	23		30
Bis(2-chloroisopropyl)ether	ND	676	349	52		290	43		40-140	18		30
2-Methylphenol	ND	676	390	58		326	48		30-130	18		30
Acetophenone	ND	676	339	50		303	45		40-140	11		30
Hexachloroethane	ND	676	327	48		261	**39**	Q	40-140	22		30
N-Nitroso-di-n-propylamine	ND	676	431	64		363	54		40-140	17		30
4-Methylphenol	ND	676	417	62		348	51		30-130	18		30
Nitrobenzene	ND	676	370	55		307	45		40-140	19		30
Isophorone	ND	676	512	76		427	63		40-140	18		30
2-Nitrophenol	ND	676	399	59		337	50		30-130	17		30
2,4-Dimethylphenol	ND	676	346	51		275	41		30-130	23		30
Benzoic Acid	ND	3380	2010J	59		1960J	58		40-140	3		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-7 WG929407-8 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Bis(2-chloroethoxy)methane	ND	676	448	66		374	55		40-140	18		30
2,4-Dichlorophenol	ND	676	452	67		391	58		30-130	14		30
1,2,4-Trichlorobenzene	ND	676	359	53		296	44		40-140	19		30
Naphthalene	ND	676	372	55		310	46		40-140	18		30
4-Chloroaniline	ND	676	463	69		402	59		40-140	14		30
Hexachlorobutadiene	ND	676	338	50		277	41		40-140	20		30
Caprolactam	ND	676	694	103		723	107		40-140	4		30
P-Chloro-M-Cresol	ND	676	565	84		509	75		30-130	10		30
2-Methylnaphthalene	ND	676	442	65		367	54		40-140	19		30
1,2,4,5-Tetrachlorobenzene	ND	676	460	68		381	56		40-140	19		30
Hexachlorocyclopentadiene	ND	676	315	47		244	**36**	Q	40-140	25		30
2,4,6-Trichlorophenol	ND	676	558	83		480	71		30-130	15		30
2,4,5-Trichlorophenol	ND	676	608	90		593	87		30-130	2		30
Biphenyl	ND	676	447	66		398	59		40-140	12		30
2-Chloronaphthalene	ND	676	487	72		412	61		40-140	17		30
2-Nitroaniline	ND	676	614	91		587	87		40-140	4		30
Acenaphthylene	ND	676	531	79		467	69		40-140	13		30
Dimethylphthalate	ND	676	630	93		603	89		40-140	4		30
2,6-Dinitrotoluene	ND	676	643	95		630	93		40-140	2		30
Acenaphthene	ND	676	538	80		475	70		40-140	12		30
3-Nitroaniline	ND	676	637	94		624	92		40-140	2		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-7 WG929407-8 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
2,4-Dinitrophenol	ND	676	566	84		622	92		30-130	9		30
Dibenzofuran	ND	676	566	84		519	77		40-140	9		30
2,3,4,6-Tetrachlorophenol	ND	676	708	105		700	103		30-130	1		30
2,4-Dinitrotoluene	ND	676	701	104		700	103		40-140	0		30
4-Nitrophenol	ND	676	681	101		740	109		30-130	8		30
Fluorene	ND	676	589	87		561	83		40-140	5		30
4-Chlorophenyl phenyl ether	ND	676	593	88		557	82		40-140	6		30
Diethylphthalate	ND	676	669	99		661	97		40-140	1		30
4-Nitroaniline	ND	676	688	102		687	101		40-140	0		30
4,6-Dinitro-2-Methylphenol	ND	676	644	95		698	103		30-130	8		30
Azobenzene	ND	676	630	93		608	90		40-140	4		30
NitrosoDiPhenylAmine(NDPA)/DPA	ND	676	672	99		675	100		40-140	0		30
4-Bromophenyl phenyl ether	ND	676	620	92		622	92		40-140	0		30
Hexachlorobenzene	ND	676	632	94		628	93		40-140	1		30
Atrazine	ND	676	532	79		598	88		40-140	12		30
Pentachlorophenol	ND	676	659	97		725	107		30-130	10		30
Phenanthrene	ND	676	640	95		634	93		40-140	1		30
Anthracene	ND	676	616	91		649	96		40-140	5		30
Carbazole	ND	676	692	102		714	105		40-140	3		30
Di-n-butylphthalate	ND	676	681	101		732	108		40-140	7		30
Fluoranthene	ND	676	655	97		700	103		40-140	7		30

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-7 WG929407-8 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
Benzidine	ND	1690	410J	**24**	Q	480.J	**28**	Q	40-140	16		30
Pyrene	ND	676	666	99		706	104		40-140	6		30
Butylbenzylphthalate	ND	676	718	106		766	113		40-140	6		30
3,3'-Dichlorobenzidine	ND	676	561	83		632	93		40-140	12		30
Benz(a)anthracene	ND	676	667	99		698	103		40-140	5		30
Chrysene	ND	676	696	103		706	104		40-140	1		30
Bis(2-Ethylhexyl)phthalate	ND	676	727	108		776	114		40-140	7		30
Di-n-octylphthalate	ND	676	715	106		762	112		40-140	6		30
Benzo(b)fluoranthene	ND	676	656	97		695	102		40-140	6		30
Benzo(k)fluoranthene	ND	676	706	104		712	105		40-140	1		30
Benzo(a)pyrene	ND	676	665	98		691	102		40-140	4		30
Indeno(1,2,3-cd)Pyrene	ND	676	675	100		702	103		40-140	4		30
Dibenz(a,h)anthracene	ND	676	705	104		734	108		40-140	4		30
Benzo(ghi)perylene	ND	676	658	97		686	101		40-140	4		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	99		101		30-130
2-Fluorobiphenyl	68		58		30-130
2-Fluorophenol	48		37		30-130
Nitrobenzene-d5	52		44		30-130
Phenol-d5	54		45		30-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310
Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-7 WG929407-8 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Terphenyl-d14	95		101		30-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-4 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Phenol	ND	ND	ug/kg	NC		30
1,4-Dichlorobenzene	ND	ND	ug/kg	NC		30
1,2-Dichlorobenzene	ND	ND	ug/kg	NC		30
Benzyl alcohol	ND	ND	ug/kg	NC		30
4-Methylphenol	ND	ND	ug/kg	NC		30
2,4-Dimethylphenol	ND	ND	ug/kg	NC		30
Benzoic acid	ND	ND	ug/kg	NC		30
1,2,4-Trichlorobenzene	ND	ND	ug/kg	NC		30
Naphthalene	ND	ND	ug/kg	NC		30
2-Methylnaphthalene	ND	ND	ug/kg	NC		30
Dimethylphthalate	ND	ND	ug/kg	NC		30
Acenaphthene	ND	ND	ug/kg	NC		30
Dibenzofuran	ND	ND	ug/kg	NC		30
Fluorene	ND	ND	ug/kg	NC		30
n-Nitrosodiphenylamine	ND	ND	ug/kg	NC		30
Hexachlorobenzene	ND	ND	ug/kg	NC		30
Pentachlorophenol	ND	ND	ug/kg	NC		30
Phenanthrene	ND	ND	ug/kg	NC		30
Anthracene	ND	ND	ug/kg	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-4 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND					
Fluoranthene	ND	ND	ug/kg	NC	30
Pyrene	ND	ND	ug/kg	NC	30
Butylbenzylphthalate	ND	ND	ug/kg	NC	30
Benz(a)anthracene	ND	ND	ug/kg	NC	30
Chrysene	ND	ND	ug/kg	NC	30
bis(2-Ethylhexyl)phthalate	ND	ND	ug/kg	NC	30
Benzo(b)fluoranthene	ND	ND	ug/kg	NC	30
Benzo(k)fluoranthene	ND	ND	ug/kg	NC	30
Benzo(a)pyrene	ND	ND	ug/kg	NC	30
Indeno(1,2,3-cd)pyrene	ND	ND	ug/kg	NC	30
Dibenz(a,h)anthracene	ND	ND	ug/kg	NC	30
Benzo(g,h,i)perylene	ND	ND	ug/kg	NC	30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	73		76		30-130
Phenol-d5	68		72		30-130
Nitrobenzene-d5	67		73		30-130
2-Fluorophenol	62		68		30-130
2,4,6-Tribromophenol	88		95		30-130
Terphenyl-d14	108		107		30-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG929407-4 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND					

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria

METALS

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-01 Date Collected: 08/10/16 10:30

Client ID: LDW-BA-PC-ENRMAT-SAND Date Received: 08/11/16

Sample Location: LDW Field Prep: Not Specified

Matrix: Sediment

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	1.85		mg/kg	0.027	0.003	2	08/25/16 14:10	08/30/16 14:22	EPA 3050B	1,6020A	DB
Cadmium, Total	0.040		mg/kg	0.011	0.001	2	08/25/16 14:10	08/30/16 14:22	EPA 3050B	1,6020A	DB
Chromium, Total	13.9		mg/kg	0.108	0.025	2	08/25/16 14:10	08/30/16 14:22	EPA 3050B	1,6020A	DB
Copper, Total	13.0		mg/kg	0.108	0.006	2	08/25/16 14:10	08/30/16 14:22	EPA 3050B	1,6020A	DB
Lead, Total	1.66		mg/kg	0.162	0.052	10	08/25/16 14:10	08/31/16 09:13	EPA 3050B	1,6020A	DB
Mercury, Total	0.009	J	mg/kg	0.011	0.001	5	08/25/16 14:10	08/30/16 14:15	EPA 7474	1,7474	LC
Silver, Total	0.047		mg/kg	0.032	0.001	2	08/25/16 14:10	08/25/16 20:55	EPA 3050B	1,6020A	DB
Zinc, Total	26.0		mg/kg	0.540	0.140	2	08/25/16 14:10	08/30/16 14:22	EPA 3050B	1,6020A	DB

Project Name: LDW/AC PILOT STUDY
Lab Number: L1625234
Project Number: LY15160310
Report Date: 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-02
Client ID: LDW-BA-PC-ENRMAT-GRAVSAND
Sample Location: LDW
Matrix: Sediment
Percent Solids: 97%

Date Collected: 08/10/16 10:45
Date Received: 08/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.24		mg/kg	0.028	0.003	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB
Cadmium, Total	0.036		mg/kg	0.011	0.001	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB
Chromium, Total	14.3		mg/kg	0.111	0.026	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB
Copper, Total	12.1		mg/kg	0.111	0.006	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB
Lead, Total	1.06		mg/kg	0.033	0.011	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB
Mercury, Total	0.007	J	mg/kg	0.014	0.002	5	08/25/16 14:10	08/30/16 14:26	EPA 7474	1,7474	LC
Silver, Total	0.025	J	mg/kg	0.033	0.001	2	08/25/16 14:10	08/25/16 20:59	EPA 3050B	1,6020A	DB
Zinc, Total	21.3		mg/kg	0.555	0.144	2	08/25/16 14:10	08/30/16 14:27	EPA 3050B	1,6020A	DB

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG925955-1										
Silver, Total	ND		mg/kg	0.050	0.001	2	08/25/16 14:10	08/25/16 20:52	1,6020A	DB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG925961-1										
Arsenic, Total	0.014	J	mg/kg	0.050	0.006	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB
Cadmium, Total	ND		mg/kg	0.020	0.003	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB
Chromium, Total	ND		mg/kg	0.200	0.047	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB
Copper, Total	0.027	J	mg/kg	0.200	0.011	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB
Lead, Total	ND		mg/kg	0.060	0.019	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB
Zinc, Total	ND		mg/kg	1.00	0.260	2	08/25/16 14:10	08/30/16 14:13	1,6020A	DB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG925963-1										
Mercury, Total	ND		mg/kg	0.013	0.002	5	08/25/16 14:10	08/30/16 14:10	1,7474	LC

Prep Information

Digestion Method: EPA 7474

Lab Control Sample Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG925955-2 SRM Lot Number: D089-540								
Silver, Total	88		-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG925961-2 SRM Lot Number: D089-540								
Arsenic, Total	111		-		80-120	-		20
Cadmium, Total	108		-		82-117	-		20
Chromium, Total	101		-		79-121	-		20
Copper, Total	109		-		80-119	-		20
Lead, Total	105		-		81-119	-		20
Zinc, Total	112		-		80-119	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG925963-2 SRM Lot Number: D089-540								
Mercury, Total	120		-		57-143	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925955-4 WG925955-5 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
Silver, Total	0.047	1.16	1.12	93		1.00	88		75-125	11		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925955-6 WG925955-7 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
Silver, Total	0.025J	1.19	1.13	95		1.03	94		75-125	9		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925961-4 WG925961-5 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
Arsenic, Total	1.85	118	118	98		136	104		75-125	14		20
Cadmium, Total	0.040	58.9	60.3	102		67.1	104		75-125	11		20
Chromium, Total	13.9	118	136	104		154	108		75-125	12		20
Copper, Total	13.0	118	133	102		149	105		75-125	11		20
Lead, Total	1.66	118	125	105		136	104		75-125	8		20
Zinc, Total	26.0	118	136	93		152	97		75-125	11		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925961-6 WG925961-7 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
Arsenic, Total	2.24	106	113	104		125	115		75-125	10		20
Cadmium, Total	0.036	53.2	55.8	105		57.0	106		75-125	2		20
Chromium, Total	14.3	106	127	106		125	104		75-125	2		20
Copper, Total	12.1	106	126	107		122	103		75-125	3		20
Lead, Total	1.06	106	98.6	92		96.9	90		75-125	2		20
Zinc, Total	21.3	106	133	105		127	99		75-125	5		20

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925963-4 WG925963-5 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND										
Mercury, Total	0.009J	0.543	0.550	101	0.712	98	80-120	**26**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925963-6 WG925963-7 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND										
Mercury, Total	0.007J	0.741	0.689	93	0.560	102	80-120	**21**	Q	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925955-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Silver, Total	0.047	0.037	mg/kg	**24**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925961-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Arsenic, Total	1.85	1.82	mg/kg	2		20
Cadmium, Total	0.040	0.040	mg/kg	2		20
Chromium, Total	13.9	14.2	mg/kg	2		20
Copper, Total	13.0	13.0	mg/kg	0		20
Zinc, Total	26.0	24.1	mg/kg	8		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925961-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Lead, Total	1.66	1.64	mg/kg	1		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925963-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Mercury, Total	0.009J	0.017	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-01
Client ID: LDW-BA-PC-ENRMAT-SAND
Sample Location: LDW
Matrix: Sediment

Date Collected: 08/10/16 10:30
Date Received: 08/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.032		%	0.010	0.010	1	-	08/29/16 10:59	1,9060A	CM
Total Organic Carbon (Rep2)	0.032		%	0.010	0.010	1	-	08/29/16 10:59	1,9060A	CM
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Coarse Gravel	ND		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Fine Gravel	0.200		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Total Gravel	0.200		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Coarse Sand	15.5		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Medium Sand	49.9		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Fine Sand	32.6		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Total Sand	98.0		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Silt Fine	1.60		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Clay Fine	0.200		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
% Total Fines	1.80		%	0.100	NA	1	-	09/08/16 10:43	12,D422	AR
General Chemistry - Mansfield Lab										
Solids, Total	95.9		%	0.100	0.100	1	-	08/24/16 14:19	121,2540G	AR
% Soot (Rep 1)	0.034		%	0.010	NA	1	-	08/30/16 09:03	91,-	AR
% Soot (Rep 2)	0.027		%	0.010	NA	1	-	08/30/16 09:03	91,-	AR

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

SAMPLE RESULTS

Lab ID: L1625234-02
Client ID: LDW-BA-PC-ENRMAT-GRAVSAND
Sample Location: LDW
Matrix: Sediment

Date Collected: 08/10/16 10:45
Date Received: 08/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.170		%	0.010	0.010	1	-	08/29/16 13:38	1,9060A	CM
Total Organic Carbon (Rep2)	0.168		%	0.010	0.010	1	-	08/29/16 13:38	1,9060A	CM
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Coarse Gravel	ND		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Fine Gravel	36.7		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Total Gravel	36.7		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Coarse Sand	28.7		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Medium Sand	21.4		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Fine Sand	6.20		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Total Sand	62.3		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Silt Fine	1.00		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Clay Fine	ND		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
% Total Fines	1.00		%	0.100	NA	1	-	09/01/16 10:37	12,D422	AR
General Chemistry - Mansfield Lab										
Solids, Total	96.9		%	0.100	0.100	1	-	08/24/16 14:19	121,2540G	AR
% Soot (Rep 1)	0.020		%	0.010	NA	1	-	08/30/16 09:54	91,-	AR
% Soot (Rep 2)	0.019		%	0.010	NA	1	-	08/30/16 09:54	91,-	AR

Sample Retested. See T16-1630-sieve-10-5-16.pdf for results of gravelly sand grain size analysis

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab for sample(s): 01-02 Batch: WG927320-1										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	08/29/16 12:15	1,9060A	CM
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	08/29/16 12:15	1,9060A	CM
General Chemistry - Mansfield Lab for sample(s): 01-02 Batch: WG927380-1										
% Soot (Rep 1)	ND		%	0.010	NA	1	-	08/30/16 08:47	91,-	AR
% Soot (Rep 2)	ND		%	0.010	NA	1	-	08/30/16 08:47	91,-	AR

Matrix Spike Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310
Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927320-4 WG927320-5 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
Total Organic Carbon (Rep1)	0.032	0.486	0.537	104		0.528	105		75-125	2		25
Total Organic Carbon (Rep2)	0.032	0.35	0.385	101		0.569	106		75-125	**39**	Q	25
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927320-6 WG927320-7 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
Total Organic Carbon (Rep1)	0.170	0.587	0.689	88		0.744	96		75-125	8		25
Total Organic Carbon (Rep2)	0.168	0.545	0.691	96		0.685	99		75-125	1		25
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927380-4 WG927380-5 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND												
% Soot (Rep 1)	0.034	0.324	0.359	100		0.580	110		75-125	**47**	Q	25
% Soot (Rep 2)	0.027	0.328	0.367	104		0.398	107		75-125	8		25
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927380-6 WG927380-7 QC Sample: L1625234-02 Client ID: LDW-BA-PC-ENRMAT-GRAVSAND												
% Soot (Rep 1)	0.020	0.452	0.507	108		0.567	106		75-125	11		25
% Soot (Rep 2)	0.019	0.43	0.475	106		0.494	106		75-125	4		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG925587-1 QC Sample: L1625226-01 Client ID: DUP Sample						
Solids, Total	81.1	80.9	%	0		10
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927320-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Total Organic Carbon (Rep1)	0.032	0.037	%	14		25
Total Organic Carbon (Rep2)	0.032	0.042	%	**27**	Q	25
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG927380-3 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
% Soot (Rep 1)	0.034	0.012	%	**96**	Q	25
% Soot (Rep 2)	0.027	0.011	%	**84**	Q	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Grain Size Analysis - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG928105-1 QC Sample: L1625300-03 Client ID: DUP Sample						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	15.5	13.6	%	13		20
% Total Gravel	15.5	13.6	%	13		20
% Coarse Sand	13.0	15.2	%	16		20
% Medium Sand	48.8	50.9	%	4		20
% Fine Sand	21.1	19.0	%	10		20
% Total Sand	82.9	85.1	%	3		20
% Silt Fine	1.60	1.20	%	**29**	Q	20
% Clay Fine	ND	0.100	%	NC		20
% Total Fines	1.60	1.30	%	**21**	Q	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Grain Size Analysis - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG929977-1 QC Sample: L1625234-01 Client ID: LDW-BA-PC-ENRMAT-SAND						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	0.200	0.200	%	0		20
% Total Gravel	0.200	0.200	%	0		20
% Coarse Sand	15.5	16.4	%	6		20
% Medium Sand	49.9	49.8	%	0		20
% Fine Sand	32.6	32.3	%	1		20
% Total Sand	98.0	98.5	%	1		20
% Silt Fine	1.60	1.30	%	**21**	Q	20
% Clay Fine	0.200	ND	%	NC		20
% Total Fines	1.80	1.30	%	**32**	Q	20

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG927320-2

Parameter	% Recovery	Qual	QC Criteria
Total Organic Carbon (Rep1)	101		75-125
Total Organic Carbon (Rep2)	98		75-125

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234

Project Number: LY15160310 **Report Date:** 09/12/16

S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG927380-2

Parameter	% Recovery	Qual	QC Criteria
% Soot (Rep 1)	115		75-125
% Soot (Rep 2)	112		75-125

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1625234-01A	Glass 500ml/16oz unpreserved	A	N/A	24.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1625234-01B	Glass 250ml/8oz unpreserved	A	N/A	24.6	Y	Absent	A2-PB-6020T(180),A2-SVOC-8270(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-SOOT(28),A2-CR-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-PREP-3050:2T(180),A2-TOC-9060-2REPS(28),A2-AG-6020T(180),A2-CU-6020T(180),A2-PREP-3050:1T(180)
L1625234-01C	Glass 500ml/16oz unpreserved	A	N/A	24.6	Y	Absent	A2-PB-6020T(180),A2-SVOC-8270(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-SOOT(28),A2-CR-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-PREP-3050:2T(180),A2-TOC-9060-2REPS(28),A2-AG-6020T(180),A2-CU-6020T(180),A2-PREP-3050:1T(180)
L1625234-01D	Glass 250ml/8oz unpreserved	A	N/A	24.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name: LDW/AC PILOT STUDY
Project Number: LY15160310

Lab Number: L1625234
Report Date: 09/12/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1625234-02A	Glass 500ml/16oz unpreserved	A	N/A	24.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1625234-02B	Glass 250ml/8oz unpreserved	A	N/A	24.6	Y	Absent	A2-PB-6020T(180),A2-SVOC-8270(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-SOOT(28),A2-CR-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-PREP-3050:2T(180),A2-TOC-9060-2REPS(28),A2-AG-6020T(180),A2-CU-6020T(180),A2-PREP-3050:1T(180)
L1625234-02C	Glass 500ml/16oz unpreserved	A	N/A	24.6	Y	Absent	A2-PB-6020T(180),A2-SVOC-8270(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-SOOT(28),A2-CR-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-PREP-3050:2T(180),A2-TOC-9060-2REPS(28),A2-AG-6020T(180),A2-CU-6020T(180),A2-PREP-3050:1T(180)
L1625234-02D	Glass 250ml/8oz unpreserved	A	N/A	24.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name:	LDW/AC PILOT STUDY	**Lab Number:**	L1625234
Project Number:	LY15160310	**Report Date:**	09/12/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name:	LDW/AC PILOT STUDY	**Lab Number:**	L1625234
Project Number:	LY15160310	**Report Date:**	09/12/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name: LDW/AC PILOT STUDY **Lab Number:** L1625234
Project Number: LY15160310 **Report Date:** 09/12/16

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.

91 Analysis of Soot following ES&T publications by Accardi-Dey and Gschwend, 2003; and Gustafsson (et. al.), 1997.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

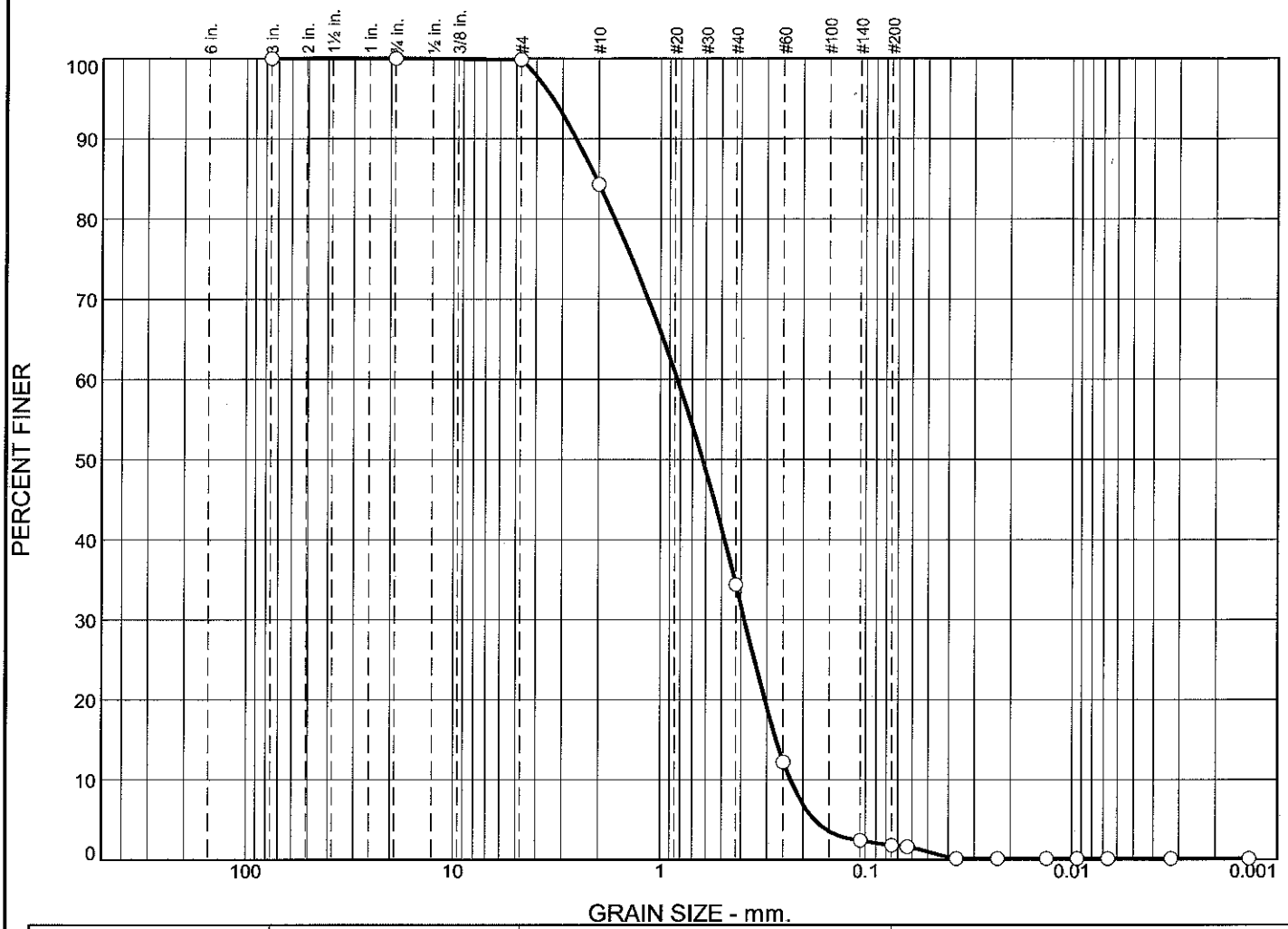
Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

ASTM D422-63

GRAIN SIZE ANALYSIS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	15.5	49.9	32.6	1.6	0.2

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.0607	0.8294	0.6235	0.3857	0.2714	0.2314	0.78	3.58

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source:** LDW-BA-PC-ENRMAT-SAND **Sample No.:** L1625234-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

9/8/2016

Location: LDW-BA-PC-ENRMAT-SAND

Sample Number: L1625234-01

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 157.22
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
157.22	0.00	3"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		#4	0.27	0.00	99.8
		#10	24.41	0.00	84.3
		#40	78.49	0.00	34.4
		#60	34.85	0.00	12.2
		#140	15.42	0.00	2.4
		#200	0.96	0.00	1.8
		#230	0.30	0.00	1.6

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.8
Weight of hydrometer sample =157.22
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = 1
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0075	1.0085	0.0136	7.5	14.3	0.0365	0.2
5.00	20.0	1.0075	1.0085	0.0136	7.5	14.3	0.0231	0.2
15.00	20.0	1.0075	1.0085	0.0136	7.5	14.3	0.0133	0.2
30.00	20.0	1.0075	1.0085	0.0136	7.5	14.3	0.0094	0.2
60.00	20.0	1.0075	1.0085	0.0136	7.5	14.3	0.0067	0.2
250.00	20.0	1.0070	1.0080	0.0136	7.0	14.4	0.0033	0.1
1440.00	20.0	1.0070	1.0080	0.0136	7.0	14.4	0.0014	0.1

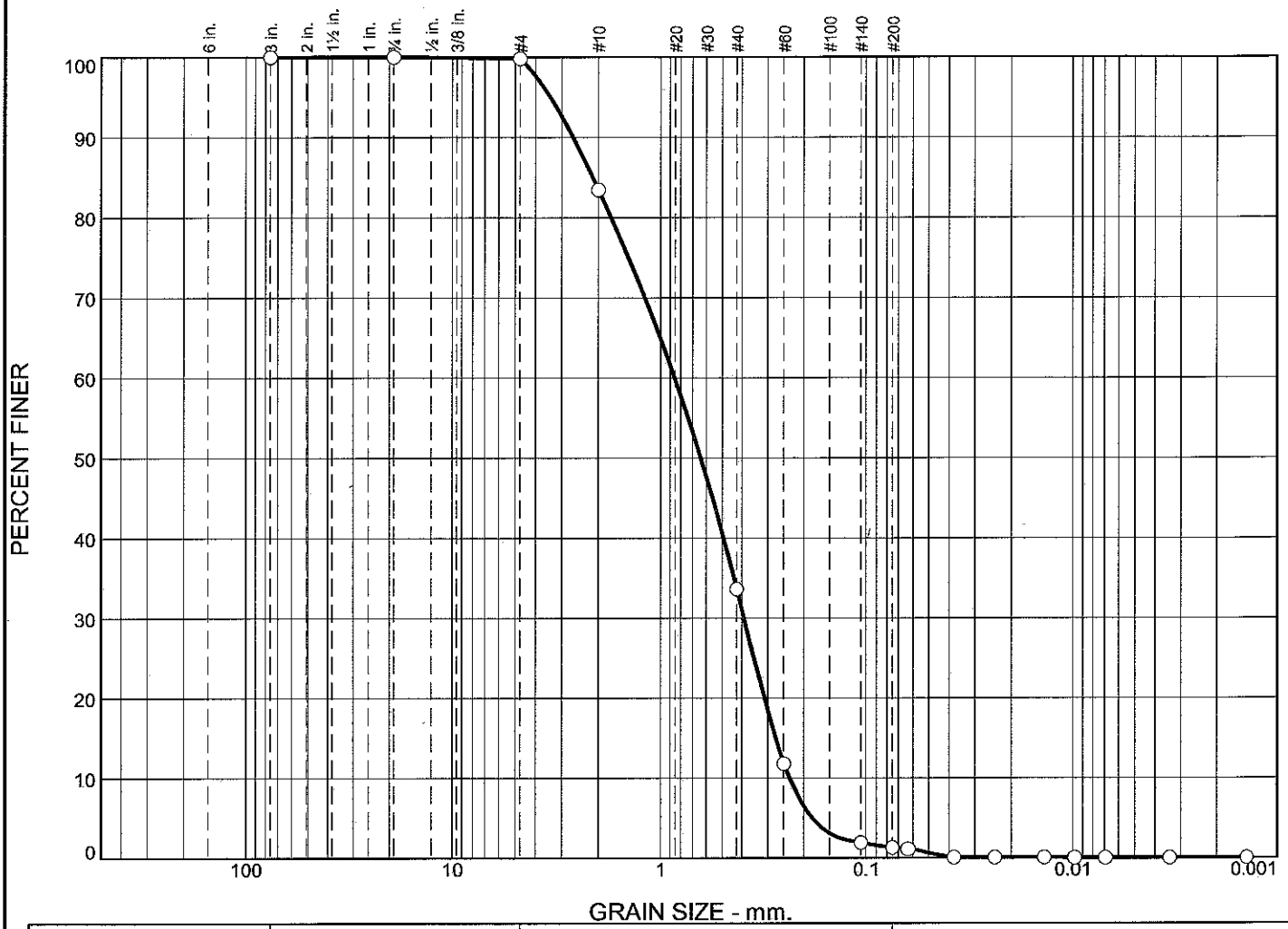
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	15.5	49.9	32.6	98.0	1.6	0.2	1.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2314	0.2714	0.3081	0.3857	0.6235	0.8294	1.6732	2.0607	2.5809	3.3471

Fineness Modulus	C_u	C_c
2.70	3.58	0.78

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	16.4	49.8	32.3	1.3	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.1333	0.8570	0.6400	0.3914	0.2747	0.2348	0.76	3.65

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source:** LDW-BA-PC-ENRMAT-SAND **Sample No.:** WG929977-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

9/8/2016

Location: LDW-BA-PC-ENRMAT-SAND
Sample Number: WG929977-1

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 170.75
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
170.75	0.00	3"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		#4	0.36	0.00	99.8
		#10	27.90	0.00	83.4
		#40	85.04	0.00	33.6
		#60	37.29	0.00	11.8
		#140	16.93	0.00	1.9
		#200	1.02	0.00	1.3
		#230	0.30	0.00	1.1

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.3
Weight of hydrometer sample =170.75
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = 1
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0035	1.0045	0.0136	3.5	15.4	0.0378	0.1
5.00	20.0	1.0035	1.0045	0.0136	3.5	15.4	0.0239	0.1
15.00	20.0	1.0035	1.0045	0.0136	3.5	15.4	0.0138	0.1
30.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0098	0.0
60.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0069	0.0
250.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0034	0.0
1440.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0014	0.0

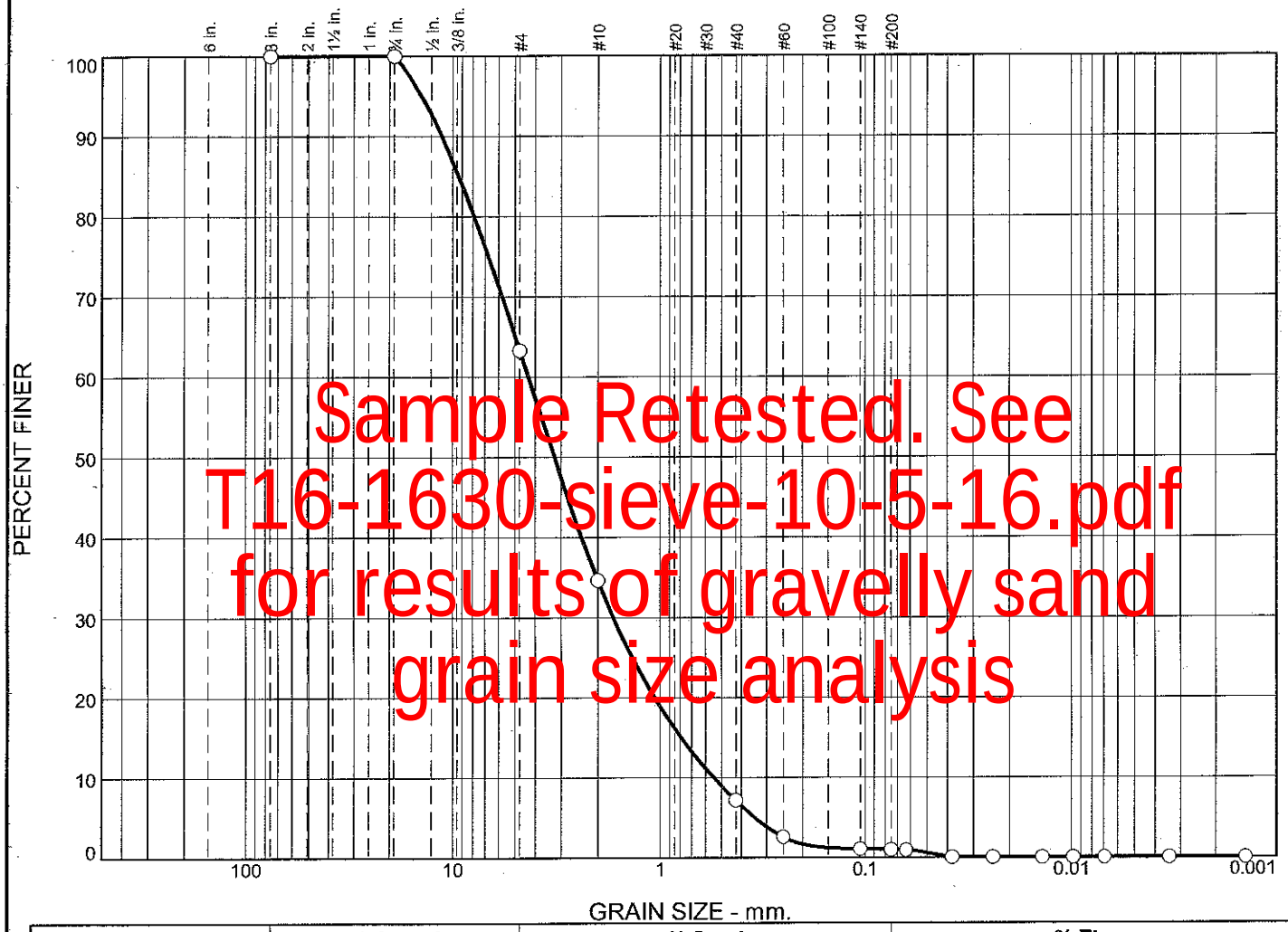
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	16.4	49.8	32.3	98.5	1.3	0.0	1.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.2348	0.2747	0.3119	0.3914	0.6400	0.8570	1.7387	2.1333	2.6552	3.4126

Fineness Modulus	C_u	C_c
2.74	3.65	0.76

Particle Size Distribution Report



Sample Retested. See T16-1630-sieve-10-5-16.pdf for results of gravelly sand grain size analysis

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	36.7	28.7	27.4	6.2	1.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.3638	4.3218	3.2407	1.6819	0.7895	0.5458	1.20	7.92

Material Description	USCS	AASHTO
○	SW	

Project No. **Client:**

Project:

○ **Source:** LDW-BA-PC-ENRMAT-GRAVSAND **Sample No.:** L1625234-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

9/9/2016

Location: LDW-BA-PC-ENRMAT-GRAVSAND
Sample Number: L1625234-02
USCS Classification: SW

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 145.20
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
145.20	0.00	3"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		#4	53.31	0.00	63.3
		#10	41.58	0.00	34.6
		#40	39.91	0.00	7.2
		#60	6.63	0.00	2.6
		#140	2.18	0.00	1.1
		#200	0.17	0.00	1.0
		#230	0.08	0.00	0.9

Sample Retested. See T16-1630-sieve-10-5-16.pdf for results of gravelly sand grain size analysis

Hydrometer Test Data

Hydrometer test uses material passing #200
Percent passing #200 based upon complete sample = 1.0
Weight of hydrometer sample = 145.20
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = 1
Meniscus correction only = 0.0
Specific gravity of solids = 2.65
Hydrometer type = 151H
Hydrometer effective depth equation: L = 16.294964 - 0.2645 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0380	0.0
5.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0240	0.0
15.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0139	0.0
30.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0098	0.0
60.00	20.0	1.0030	1.0040	0.0136	3.0	15.5	0.0069	0.0
250.00	20.0	1.0025	1.0035	0.0136	2.5	15.6	0.0034	0.0
1440.00	20.0	1.0025	1.0035	0.0136	2.5	15.6	0.0014	0.0

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	36.7	36.7	28.7	27.4	6.2	62.3	1.0	0.0	1.0

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.5458	0.7895	1.0630	1.6819	3.2407	4.3218	7.8943	9.3638	11.3090	14.1066

Fineness Modulus	C_u	C_c
4.73	7.92	1.20

Alpha Analytical

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab:

ALPHA Job #: L1625234

Project Information

Project Name: LDW/AC Pilot Study
Project Location: LDW
Project #: LY15160310
Project Manager: Liz Porta
ALPHA Quote #: M2015033

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Client Information

Client: AmecFoster Wheeler
Address: 3500 188th St. SW Suite 601, Lynnwood, WA 98037
Phone: 425-921-4008
Email: jessica.youngblood@amecfw.com
*EDD format should be as developed w/ Floyd Snider

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:
POC: Gretchen Heavner
- gretchen.heavner@floydsnider.com
#206.292.2078
- Please refer to Gretchen for all technical questions

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	TAL Metals EPA 6000/7470	SVOCs EPA 8270D	TOC EPA 9060A(m)	Grain Size ASTM D422	Black Carbon Gustafson (1997)	Sample Comments	TOTAL # BOTTLES
25234-1	LDW-BA-PC-ENRMAT-SAND	8/10/16	1030	Sediment	RG									X	X	X	X	X		4
↓ -2	LDW-BA-PC-ENRMAT-GRUSAND	8/10/16	1045	Sediment	RG									X	X	X	X	X		4
													Container Type	AG	AG	AG	AG	AG		
													Preservative	NA	NA	NA	NA	NA		

SAMPLE INFO
Filtration: ☐ Field ☐ Lab to do
Preservation: ☐ Lab to do

w/ Teflon Lid
Not environmental sample so not necessary for all

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Jessica Youngblood	8/10/16	Fedex	
Fedex		[signature]	08/11/16 10:58

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)