SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

May 26, 2019

Alaska Department of Transportation & Public Facilities
2200 East 42nd Avenue
Anchorage, AK 99508

Attn: Mr. Christian Osentoski

RE: SUMMARY OF ENVIRONMENTAL SITE ACTIVITIES, 9871 WEST MARGIN WAY, WASILLA, ALASKA: ADEC FILE NO. 2265.38.002

This report presents a summary of Shannon & Wilson's environmental site activities conducted at 9871 West Margin Way in Wasilla, Alaska. A retail/office/warehouse structure was formerly located on-site. The on-site structure was demolished during March and April 2019. The site is an Alaska Department of Environmental Conservation (ADEC) listed contaminated site under file number 2265.38.002.

BACKGROUND

In 1993, several areas of petroleum hydrocarbon soil contamination were identified in parking/storage areas behind the on-site structure. In addition, floor drains/drain pits were observed inside the building. Subsequent cleanup activities were conducted at the site to address the previously identified contamination. Three groundwater monitoring wells (MW-1, MW-2, and MW-3) were also installed and sampled as part of the 1993 assessment. Follow-up sampling was performed in 2008; however only Monitoring Well MW-1 was located and sampled "due to heavy snow cover".

In a letter dated June 25, 2013, the Alaska Department of Environmental Conservation (ADEC) requested sampling and surveying of the on-site monitoring wells. Shannon & Wilson attempted to locate the three on-site monitoring wells during a site visit in September 2017 but discovered that the well locations were covered by debris and stockpiled soil.

In an email dated April 4, 2018, Mr. Campbell of the ADEC stated that an August 1993 *Phase II Environmental Audit* described three floor drains or drainage pits located inside the warehouse units. Mr. Campbell recommended the drains be reported to the Environmental Protection Agency (EPA), as potential Class V injection wells, and decommissioned during demolition activities. A Shannon & Wilson representative performed a site visit on April 9, 2018 to

5430 FAIRBANKS STREET•SUITE 3
ANCHORAGE, ALASKA 99518
907-561-2120 • FAX 206-695-6777

evaluate the floor drains. At the time of the site visit, the floor drains were filled in with concrete and there was no evidence of associated plumbing, which could signify the presence of Class V injection wells.

The project was conducted in general accordance with our June 21, 2018 *Work Plan for Groundwater Monitoring and Well Decommissioning, 9871 Margin Way, Wasilla, Alaska: ADEC File No. 2265.38.002*, which was approved by Mr. Peter Campbell of the ADEC in the form of a letter dated June 27, 2018. The approximate groundwater monitoring well locations are shown on a 1993 HartCrowser site plan, which is included in Attachment 1. A vicinity map showing the project site and surrounding area is included as Figure 1.

FIELD ACTIVITIES

The project activities consisted of collecting a drinking water sample, attempting to locate the on-site monitoring wells for sampling and decommissioning, and evaluating the floor drains located inside the on-site structure. Wheaton Water Wells provided the equipment and personnel to facilitate access to the drinking water well. The drinking water sample was submitted to SGS North America Inc. (SGS) for laboratory analysis. Wheaton Water Wells and SGS were subcontracted to Shannon & Wilson.

Task 1 – Drinking Water Well Sampling

Prior to demolition activities, Wheaton Water Wells removed the well pump and riser pipe to facilitate access to the drinking water well for sampling. The removed equipment was stored on-site for future disposal by the demolition contractor. Following sampling, the water well was subsequently decommissioned by the ADOT&PF during site demolition activities.

The drinking water well was sampled on March 2, 2018. Depth to water was measured at approximately 74 feet below ground surface. Prior to sampling, the well was purged and sampled with a submersible pump and disposable polyethylene tubing. In an effort to reduce the amount of turbidity in the sample, the well was purged for approximately 30 minutes prior to sampling. During the purging process, field personnel monitored water quality parameters (pH, temperature, turbidity, and conductivity) and purge volume. The purge water was discharged to the ground surface in the vicinity of the well.

One analytical sample (DW1) was collected from the well following purging. The sample was delivered to SGS North America Inc. (SGS) using chain-of-custody procedures and tested on a standard 7 to 10-day turn-around-time. The sample was analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101, diesel range organics (DRO) by AK 102, residual range

organics (RRO) by AK 103, volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260C, and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270D. For quality control purposes, one trip blank was submitted for laboratory testing. The trip blank was analyzed for GRO by AK 101 and VOCs by EPA Method 8260C.

The analytical drinking water sample results were compared to the ADEC cleanup levels listed in Table C of 18 Alaska Administrative Code (AAC) 75.345 regulations (October 2018). Sample DW1 did not contain detectable concentrations of target analytes. The laboratory report is provided in Attachment 2.

Task 2 – Monitoring Well Sample

Following the removal of surface debris, Shannon & Wilson attempted to locate the on-site monitoring wells on April 5, 2019 (Photos 1 and 2 in Attachment 3). The 1993 assessment report indicated that the tops of the wells were completed with flush-mounted monuments set in concrete; therefore, once the debris was removed from the ground surface in the area of the wells, a metal detector and hand shovel was used to attempt to locate the wells. After an hour of searching for each monitoring well, the locations of the wells could not be identified. Therefore, the wells could not be decommissioned or sampled as outlined in our ADEC-approved work plan.

Task 3 – Investigate Floor Drains

Prior to April 5, 2019 and Shannon & Wilson arriving on-site, the concrete slab containing the former floor drains was removed by Coldfoot Environmental Services (Coldfoot). According to Ron Tharaldson of Coldfoot, evidence of a sump/catch basin or plumbing associated with the floor drains was not observed while removing the concrete slab. Therefore, the former floor drain/drainage pits do not appear to be associated with Class V injection wells. Photographs of the concrete slab removal activities are included as Photos 3 and 4.

CLOSURE/LIMITATIONS

You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has not, and will not, disclose the results of this study, except with your permission or as required by law.

SHANNON & WILSON, INC.

Shannon & Wilson has prepared the documents in Attachment 4, "Important Information About Your Geotechnical/Environmental Report", to assist you and others in understanding the use and limitations of our report.

We appreciate the opportunity to be of service. Please contact the undersigned at (907) 561-2120 with questions or comments concerning this report.

Sincerely,

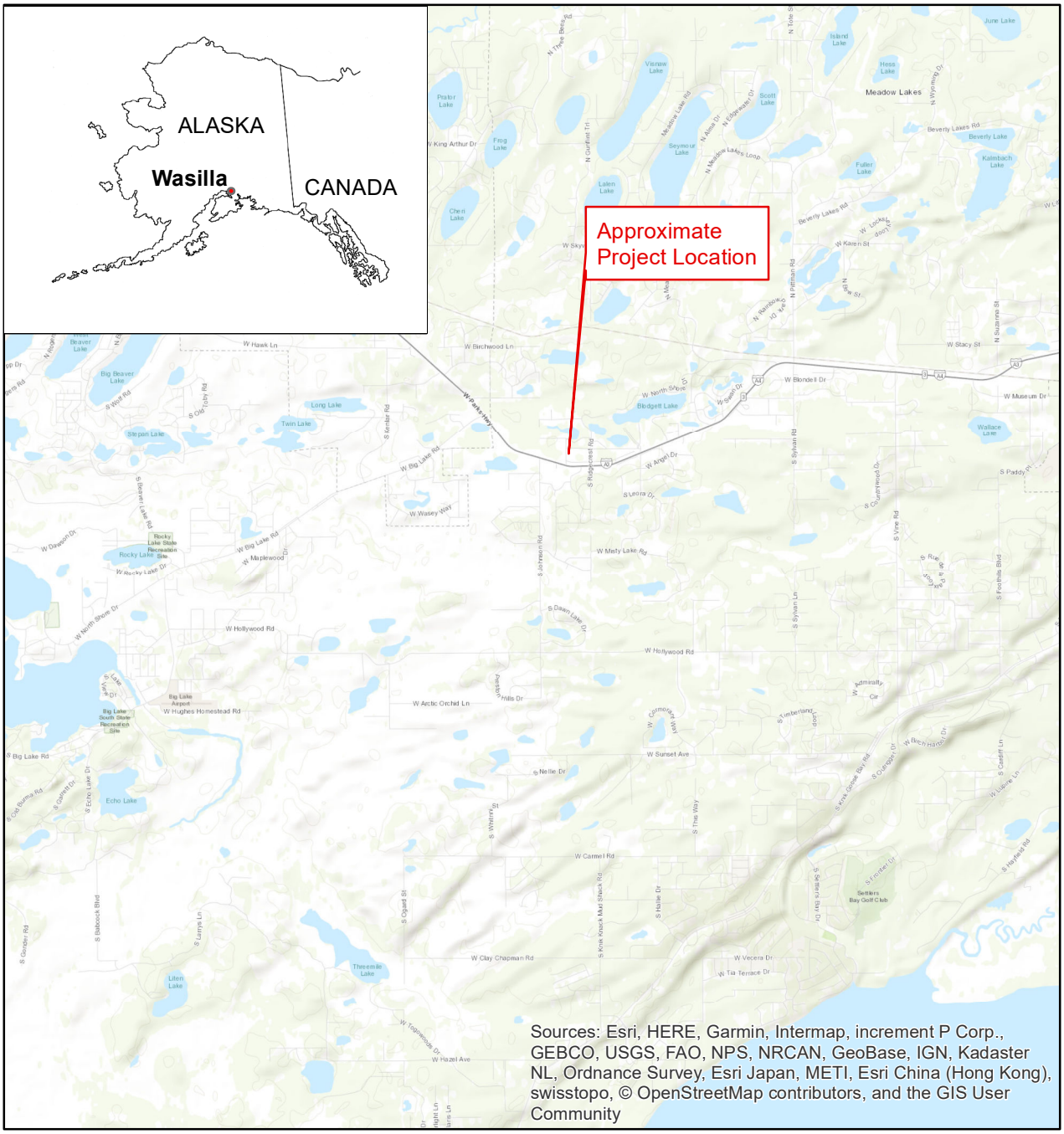
SHANNON & WILSON, INC.

Dan P. McMahon

Digitally signed by Dan P. McMahon
DN: cn=Dan P. McMahon, o=Shannon & Wilson, ou, email=dxm@shanwil.com, c=US
Date: 2019.05.26 13:20:13 -08'00'

Dan P. McMahon
Senior Associate

Encl: Figure 1 and Attachments 1 through 4



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0 1.5 3

Miles

9871 Margin Way
Wasilla, Alaska

VICINITY MAP

May 2019

32-1-17787-007

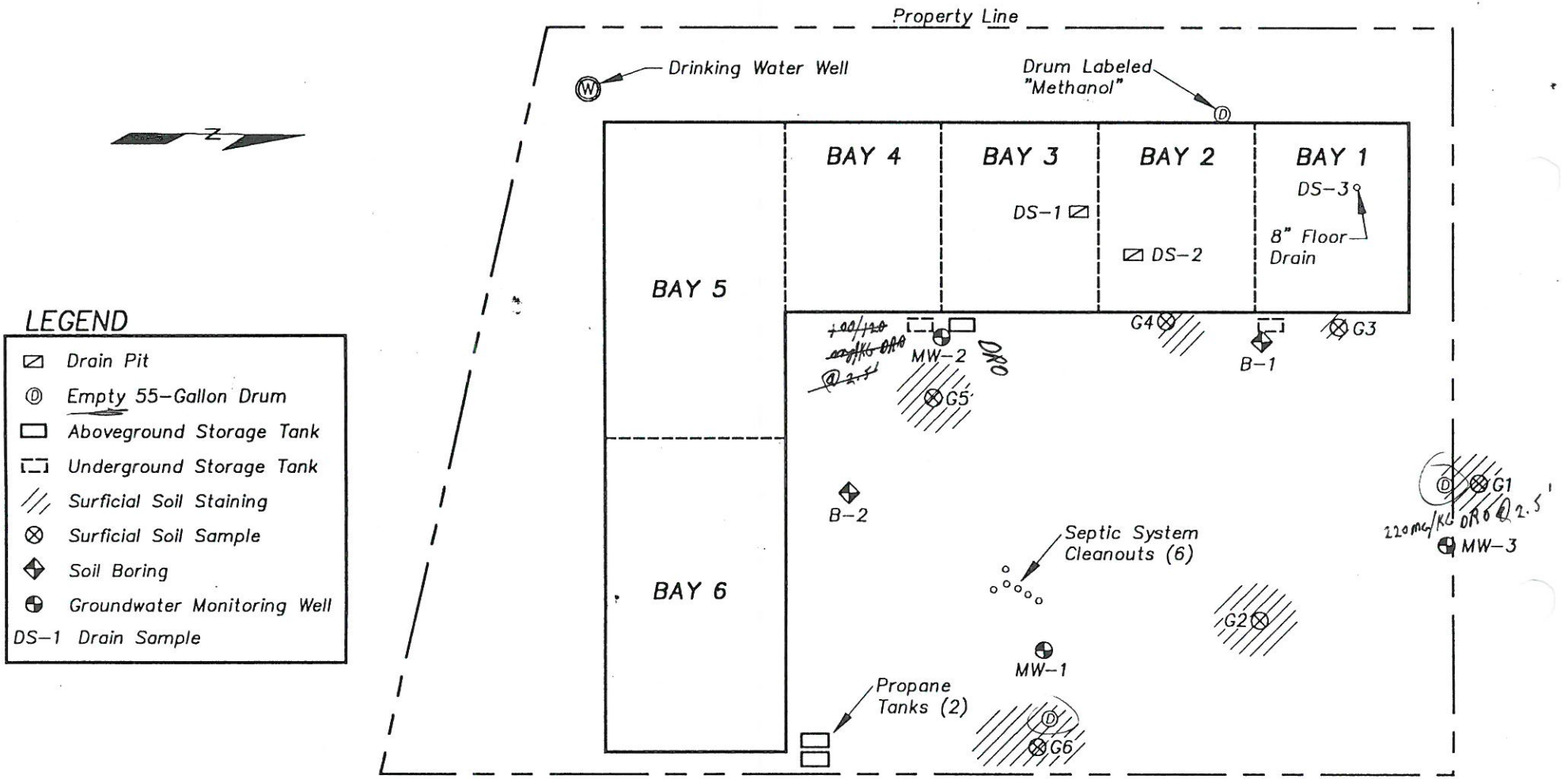
SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 1

ATTACHMENT 1

1993 SITE FIGURE

Site Plan With Exploration Locations
Lot 7, Meadow Creek Subdivision
Big Lake, Alaska



NOTE: Base map taken from site plans and as-builts provided by FDIC.

0 25 50 100
SCALE IN FEET

REF. NO: \ACAD-DWG\8311\SITEEXP

HARTCROWSER

A-8311-00 8-93
FIGURE 2

ATTACHMENT 2

RESULTS OF ANALYTICAL TESTING
BY SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street Suite 3
Anchorage, AK 99518
(907)433-3226

Report Number: **1180837**

Client Project: **32-1-17787-007 9871 W Margin W**

Dear Jake Kesler,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jillian at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Jillian Vlahovich Date
Project Manager
Jillian.Vlahovich@sgs.com

Print Date: 03/08/2018 3:38:36PM

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1180837**
Project Name/Site: **32-1-17787-007 9871 W Margin W**
Project Contact: **Jake Kesler**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
17787-DW1	1180837001	03/02/2018	03/02/2018	Water (Surface, Eff., Ground)
17787-WTB1	1180837002	03/02/2018	03/02/2018	Water (Surface, Eff., Ground)
17787-WTB2	1180837003	03/02/2018	03/02/2018	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS Liq/Liq ext. LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260C	Volatile Organic Compounds (W) FULL

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
2-Methylnaphthalene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Acenaphthene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Acenaphthylene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Benzo(a)Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Benzo[a]pyrene	0.00960	U	0.0192	0.00596	ug/L	1		03/06/18 17:17
Benzo[b]Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Benzo[g,h,i]perylene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Benzo[k]fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Chrysene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Dibenzo[a,h]anthracene	0.00960	U	0.0192	0.00596	ug/L	1		03/06/18 17:17
Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Fluorene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Indeno[1,2,3-c,d] pyrene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Naphthalene	0.0481	U	0.0962	0.0298	ug/L	1		03/06/18 17:17
Phenanthrene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Pyrene	0.0240	U	0.0481	0.0144	ug/L	1		03/06/18 17:17
Surrogates								
2-Methylnaphthalene-d10 (surr)	76.3		47-106		%	1		03/06/18 17:17
Fluoranthene-d10 (surr)	75.3		24-116		%	1		03/06/18 17:17

Batch Information

Analytical Batch: XMS10659
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 03/06/18 17:17
Container ID: 1180837001-C

Prep Batch: XXX39123
Prep Method: SW3520C
Prep Date/Time: 03/06/18 08:02
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 03/08/2018 3:38:43PM

J flagging is activated

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.302	U	0.605	0.181	mg/L	1		03/06/18 12:58
Surrogates								
5a Androstane (surr)	80.4		50-150		%	1		03/06/18 12:58

Batch Information

Analytical Batch: XFC14077
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 03/06/18 12:58
Container ID: 1180837001-A

Prep Batch: XXX39120
Prep Method: SW3520C
Prep Date/Time: 03/05/18 12:09
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.252	U	0.504	0.151	mg/L	1		03/06/18 12:58
Surrogates								
n-Triacontane-d62 (surr)	87.7		50-150		%	1		03/06/18 12:58

Batch Information

Analytical Batch: XFC14077
Analytical Method: AK103
Analyst: CMS
Analytical Date/Time: 03/06/18 12:58
Container ID: 1180837001-A

Prep Batch: XXX39120
Prep Method: SW3520C
Prep Date/Time: 03/05/18 12:09
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		03/07/18 03:52
Surrogates								
4-Bromofluorobenzene (surr)	88.2		50-150		%	1		03/07/18 03:52

Batch Information

Analytical Batch: VFC14062
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 03/07/18 03:52
Container ID: 1180837001-E

Prep Batch: VXX31991
Prep Method: SW5030B
Prep Date/Time: 03/06/18 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		03/05/18 19:03
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		03/05/18 19:03
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
Benzene	0.200	U	0.400	0.120	ug/L	1		03/05/18 19:03
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
Bromoform	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Bromomethane	2.50	U	5.00	1.50	ug/L	1		03/05/18 19:03
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
Chloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Chloromethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 19:03
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Freon-113	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		03/05/18 19:03
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
Naphthalene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
o-Xylene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		03/05/18 19:03
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Styrene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Toluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 19:03
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		03/05/18 19:03
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		03/05/18 19:03
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		03/05/18 19:03
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		03/05/18 19:03
4-Bromofluorobenzene (surr)	101		85-114		%	1		03/05/18 19:03
Toluene-d8 (surr)	101		89-112		%	1		03/05/18 19:03

Print Date: 03/08/2018 3:38:43PM

J flagging is activated

Results of **17787-DW1**

Client Sample ID: **17787-DW1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837001
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17630
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 03/05/18 19:03
Container ID: 1180837001-H

Prep Batch: VXX31988
Prep Method: SW5030B
Prep Date/Time: 03/05/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **17787-WTB1**

Client Sample ID: **17787-WTB1**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837002
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		03/07/18 02:57
Surrogates								
4-Bromofluorobenzene (surr)	86.4		50-150		%	1		03/07/18 02:57

Batch Information

Analytical Batch: VFC14062
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 03/07/18 02:57
Container ID: 1180837002-A

Prep Batch: VXX31991
Prep Method: SW5030B
Prep Date/Time: 03/06/18 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 03/08/2018 3:38:43PM

J flagging is activated

Results of **17787-WTB2**

Client Sample ID: **17787-WTB2**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837003
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		03/05/18 17:54
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		03/05/18 17:54
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		03/05/18 17:54
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		03/05/18 17:54
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		03/05/18 17:54
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		03/05/18 17:54
Benzene	0.200	U	0.400	0.120	ug/L	1		03/05/18 17:54
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
Bromoform	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
Bromomethane	2.50	U	5.00	1.50	ug/L	1		03/05/18 17:54
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		03/05/18 17:54
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		03/05/18 17:54
Chloroethane	0.500	U	1.00	0.310	ug/L	1		03/05/18 17:54

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J flagging is activated

Results of **17787-WTB2**

Client Sample ID: **17787-WTB2**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837003
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Chloromethane	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		03/05/18 17:54
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		03/05/18 17:54
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Freon-113	5.00 U		10.0	3.10	ug/L	1		03/05/18 17:54
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		03/05/18 17:54
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		03/05/18 17:54
Naphthalene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
o-Xylene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		03/05/18 17:54
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Styrene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Toluene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		03/05/18 17:54
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		03/05/18 17:54
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		03/05/18 17:54
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		03/05/18 17:54
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		03/05/18 17:54
4-Bromofluorobenzene (surr)	101		85-114		%	1		03/05/18 17:54
Toluene-d8 (surr)	101		89-112		%	1		03/05/18 17:54

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J flagging is activated

Results of **17787-WTB2**

Client Sample ID: **17787-WTB2**
Client Project ID: **32-1-17787-007 9871 W Margin W**
Lab Sample ID: 1180837003
Lab Project ID: 1180837

Collection Date: 03/02/18 11:31
Received Date: 03/02/18 13:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS17630
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 03/05/18 17:54
Container ID: 1180837003-A

Prep Batch: VXX31988
Prep Method: SW5030B
Prep Date/Time: 03/05/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1777095 [VXX/31988]
Blank Lab ID: 1436136

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001, 1180837003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Method Blank

Blank ID: MB for HBN 1777095 [VXX/31988]
Blank Lab ID: 1436136

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001, 1180837003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	101	89-112		%

Method Blank

Blank ID: MB for HBN 1777095 [VXX/31988]
Blank Lab ID: 1436136

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001, 1180837003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS17630
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: FDR
Analytical Date/Time: 3/5/2018 11:13:00AM

Prep Batch: VXX31988
Prep Method: SW5030B
Prep Date/Time: 3/5/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [VXX31988]
Blank Spike Lab ID: 1436137
Date Analyzed: 03/05/2018 12:01

Spike Duplicate ID: LCSD for HBN 1180837 [VXX31988]
Spike Duplicate Lab ID: 1436138
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837003

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	31.7	106	30	32.7	109	(78-124)	3.10	(< 20)
1,1,1-Trichloroethane	30	30.7	102	30	31.0	103	(74-131)	0.78	(< 20)
1,1,2,2-Tetrachloroethane	30	31.4	105	30	31.4	105	(71-121)	0.10	(< 20)
1,1,2-Trichloroethane	30	31.4	105	30	31.9	106	(80-119)	1.60	(< 20)
1,1-Dichloroethane	30	30.2	101	30	30.7	102	(77-125)	1.60	(< 20)
1,1-Dichloroethene	30	30.6	102	30	31.2	104	(71-131)	1.80	(< 20)
1,1-Dichloropropene	30	31.0	103	30	31.4	105	(79-125)	1.30	(< 20)
1,2,3-Trichlorobenzene	30	32.4	108	30	29.2	97	(69-129)	10.50	(< 20)
1,2,3-Trichloropropane	30	30.8	103	30	30.2	101	(73-122)	2.00	(< 20)
1,2,4-Trichlorobenzene	30	32.1	107	30	31.3	104	(69-130)	2.50	(< 20)
1,2,4-Trimethylbenzene	30	31.7	106	30	32.9	110	(79-124)	3.70	(< 20)
1,2-Dibromo-3-chloropropane	30	32.6	109	30	29.7	99	(62-128)	9.50	(< 20)
1,2-Dibromoethane	30	31.1	104	30	31.5	105	(77-121)	1.20	(< 20)
1,2-Dichlorobenzene	30	30.8	103	30	32.3	108	(80-119)	4.80	(< 20)
1,2-Dichloroethane	30	28.7	96	30	28.9	96	(73-128)	0.52	(< 20)
1,2-Dichloropropane	30	30.4	101	30	30.7	102	(78-122)	0.88	(< 20)
1,3,5-Trimethylbenzene	30	31.2	104	30	32.9	110	(75-124)	5.10	(< 20)
1,3-Dichlorobenzene	30	31.3	104	30	32.2	107	(80-119)	2.80	(< 20)
1,3-Dichloropropane	30	31.5	105	30	31.8	106	(80-119)	0.92	(< 20)
1,4-Dichlorobenzene	30	31.4	105	30	32.3	108	(79-118)	2.90	(< 20)
2,2-Dichloropropane	30	30.6	102	30	31.5	105	(60-139)	2.90	(< 20)
2-Butanone (MEK)	90	92.1	102	90	78.7	87	(56-143)	15.70	(< 20)
2-Chlorotoluene	30	31.2	104	30	32.3	108	(79-122)	3.60	(< 20)
2-Hexanone	90	92.8	103	90	85.4	95	(57-139)	8.20	(< 20)
4-Chlorotoluene	30	31.1	104	30	32.3	108	(78-122)	3.90	(< 20)
4-Isopropyltoluene	30	31.2	104	30	33.9	113	(77-127)	8.10	(< 20)
4-Methyl-2-pentanone (MIBK)	90	92.1	102	90	87.7	97	(67-130)	4.90	(< 20)
Benzene	30	30.4	101	30	30.8	103	(79-120)	1.60	(< 20)
Bromobenzene	30	30.9	103	30	32.0	107	(80-120)	3.50	(< 20)
Bromochloromethane	30	30.6	102	30	31.1	104	(78-123)	1.40	(< 20)
Bromodichloromethane	30	30.9	103	30	31.4	105	(79-125)	1.60	(< 20)
Bromoform	30	32.8	109	30	33.1	110	(66-130)	0.85	(< 20)
Bromomethane	30	32.9	110	30	33.1	110	(53-141)	0.70	(< 20)
Carbon disulfide	45	45.4	101	45	46.3	103	(64-133)	2.10	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [VXX31988]
Blank Spike Lab ID: 1436137
Date Analyzed: 03/05/2018 12:01

Spike Duplicate ID: LCSD for HBN 1180837 [VXX31988]
Spike Duplicate Lab ID: 1436138
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837003

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	31.4	105	30	31.9	106	(72-136)	1.40	(< 20)
Chlorobenzene	30	30.1	100	30	30.7	102	(82-118)	2.10	(< 20)
Chloroethane	30	31.4	105	30	33.9	113	(60-138)	7.60	(< 20)
Chloroform	30	29.8	99	30	30.1	100	(79-124)	0.87	(< 20)
Chloromethane	30	31.7	106	30	32.6	109	(50-139)	2.60	(< 20)
cis-1,2-Dichloroethene	30	30.1	100	30	30.5	102	(78-123)	1.20	(< 20)
cis-1,3-Dichloropropene	30	31.3	104	30	31.7	106	(75-124)	1.40	(< 20)
Dibromochloromethane	30	32.0	107	30	32.9	110	(74-126)	2.70	(< 20)
Dibromomethane	30	29.8	99	30	30.1	100	(79-123)	0.90	(< 20)
Dichlorodifluoromethane	30	30.5	102	30	29.7	99	(32-152)	2.80	(< 20)
Ethylbenzene	30	31.2	104	30	32.0	107	(79-121)	2.60	(< 20)
Freon-113	45	47.1	105	45	48.1	107	(70-136)	2.20	(< 20)
Hexachlorobutadiene	30	30.9	103	30	35.0	117	(66-134)	12.50	(< 20)
Isopropylbenzene (Cumene)	30	31.7	106	30	32.7	109	(72-131)	3.30	(< 20)
Methylene chloride	30	28.5	95	30	29.2	97	(74-124)	2.60	(< 20)
Methyl-t-butyl ether	45	45.1	100	45	45.3	101	(71-124)	0.62	(< 20)
Naphthalene	30	33.3	111	30	27.6	92	(61-128)	18.80	(< 20)
n-Butylbenzene	30	31.5	105	30	34.6	115	(75-128)	9.40	(< 20)
n-Propylbenzene	30	32.1	107	30	34.0	113	(76-126)	5.70	(< 20)
o-Xylene	30	31.0	103	30	31.6	105	(78-122)	2.00	(< 20)
P & M -Xylene	60	62.5	104	60	63.5	106	(80-121)	1.60	(< 20)
sec-Butylbenzene	30	31.6	105	30	33.9	113	(77-126)	7.20	(< 20)
Styrene	30	31.3	104	30	32.1	107	(78-123)	2.70	(< 20)
tert-Butylbenzene	30	31.5	105	30	33.2	111	(78-124)	5.00	(< 20)
Tetrachloroethene	30	31.5	105	30	32.4	108	(74-129)	2.80	(< 20)
Toluene	30	29.7	99	30	30.4	101	(80-121)	2.20	(< 20)
trans-1,2-Dichloroethene	30	30.2	101	30	30.7	102	(75-124)	1.90	(< 20)
trans-1,3-Dichloropropene	30	31.9	106	30	32.9	110	(73-127)	3.00	(< 20)
Trichloroethene	30	30.6	102	30	31.0	103	(79-123)	1.40	(< 20)
Trichlorofluoromethane	30	30.9	103	30	31.1	104	(65-141)	0.61	(< 20)
Vinyl acetate	30	30.7	102	30	30.4	101	(54-146)	0.88	(< 20)
Vinyl chloride	30	30.0	100	30	30.1	100	(58-137)	0.27	(< 20)
Xylenes (total)	90	93.5	104	90	95.1	106	(79-121)	1.70	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [VXX31988]
Blank Spike Lab ID: 1436137
Date Analyzed: 03/05/2018 12:01

Spike Duplicate ID: LCSD for HBN 1180837 [VXX31988]
Spike Duplicate Lab ID: 1436138
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837003

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	97.1	97	30	96.5	97	(81-118)	0.59	
4-Bromofluorobenzene (surr)	30	99.3	99	30	101	101	(85-114)	1.20	
Toluene-d8 (surr)	30	100	100	30	102	102	(89-112)	1.40	

Batch Information

Analytical Batch: **VMS17630**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **FDR**

Prep Batch: **VXX31988**
Prep Method: **SW5030B**
Prep Date/Time: **03/05/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Matrix Spike Summary

Original Sample ID: 1436139
MS Sample ID: 1436140 MS
MSD Sample ID: 1436141 MSD

Analysis Date: 03/05/2018 18:29
Analysis Date: 03/05/2018 19:21
Analysis Date: 03/05/2018 19:38
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837003

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	0.250U	30.0	32.1	107	30.0	30.7	102	78-124	4.40	(< 20)
1,1,1-Trichloroethane	0.500U	30.0	30.7	102	30.0	30.7	102	74-131	0.03	(< 20)
1,1,2,2-Tetrachloroethane	0.250U	30.0	31.9	106	30.0	30.8	103	71-121	3.40	(< 20)
1,1,2-Trichloroethane	0.200U	30.0	31.6	105	30.0	31.3	104	80-119	0.73	(< 20)
1,1-Dichloroethane	0.500U	30.0	30.3	101	30.0	30.3	101	77-125	0.13	(< 20)
1,1-Dichloroethene	0.500U	30.0	30.3	101	30.0	30.4	101	71-131	0.23	(< 20)
1,1-Dichloropropene	0.500U	30.0	30.9	103	30.0	30.9	103	79-125	0.16	(< 20)
1,2,3-Trichlorobenzene	0.500U	30.0	32.6	109	30.0	33.1	110	69-129	1.60	(< 20)
1,2,3-Trichloropropane	0.500U	30.0	31.2	104	30.0	30.3	101	73-122	3.10	(< 20)
1,2,4-Trichlorobenzene	0.500U	30.0	32.9	110	30.0	32.4	108	69-130	1.70	(< 20)
1,2,4-Trimethylbenzene	0.500U	30.0	32.6	109	30.0	31.5	105	79-124	3.50	(< 20)
1,2-Dibromo-3-chloropropane	5.00U	30.0	31.6	105	30.0	32.1	107	62-128	1.70	(< 20)
1,2-Dibromoethane	0.0375U	30.0	31.5	105	30.0	30.9	103	77-121	1.70	(< 20)
1,2-Dichlorobenzene	0.500U	30.0	32.3	108	30.0	31.0	103	80-119	3.90	(< 20)
1,2-Dichloroethane	0.250U	30.0	29.1	97	30.0	29.3	98	73-128	0.62	(< 20)
1,2-Dichloropropane	0.500U	30.0	30	100	30.0	30.3	101	78-122	0.90	(< 20)
1,3,5-Trimethylbenzene	0.500U	30.0	32.4	108	30.0	31.5	105	75-124	2.80	(< 20)
1,3-Dichlorobenzene	0.500U	30.0	31.9	106	30.0	31.2	104	80-119	2.10	(< 20)
1,3-Dichloropropane	0.250U	30.0	31.6	105	30.0	31.4	105	80-119	0.60	(< 20)
1,4-Dichlorobenzene	0.250U	30.0	32.4	108	30.0	31.2	104	79-118	3.60	(< 20)
2,2-Dichloropropane	0.500U	30.0	28.5	95	30.0	28.9	96	60-139	1.30	(< 20)
2-Butanone (MEK)	5.00U	90.0	85.9	95	90.0	93.1	103	56-143	8.10	(< 20)
2-Chlorotoluene	0.500U	30.0	32.3	108	30.0	31.5	105	79-122	2.40	(< 20)
2-Hexanone	5.00U	90.0	91.3	101	90.0	94.4	105	57-139	3.30	(< 20)
4-Chlorotoluene	0.500U	30.0	32.5	108	30.0	31.2	104	78-122	4.20	(< 20)
4-Isopropyltoluene	0.500U	30.0	32.3	108	30.0	31.4	105	77-127	2.70	(< 20)
4-Methyl-2-pentanone (MIBK)	5.00U	90.0	89.5	100	90.0	91.6	102	67-130	2.30	(< 20)
Benzene	0.200U	30.0	30.5	102	30.0	30.6	102	79-120	0.39	(< 20)
Bromobenzene	0.500U	30.0	31.9	106	30.0	30.8	103	80-120	3.30	(< 20)
Bromochloromethane	0.500U	30.0	30.4	101	30.0	30.5	102	78-123	0.13	(< 20)
Bromodichloromethane	0.250U	30.0	30.9	103	30.0	31.4	105	79-125	1.50	(< 20)
Bromoform	0.500U	30.0	32.1	107	30.0	31.3	104	66-130	2.50	(< 20)
Bromomethane	2.50U	30.0	27.4	92	30.0	27.4	91	53-141	0.26	(< 20)
Carbon disulfide	5.00U	45.0	44.5	99	45.0	44.8	100	64-133	0.67	(< 20)
Carbon tetrachloride	0.500U	30.0	31.1	104	30.0	31.3	104	72-136	0.42	(< 20)
Chlorobenzene	0.250U	30.0	30.6	102	30.0	30.4	101	82-118	0.49	(< 20)
Chloroethane	0.500U	30.0	34.3	114	30.0	33.7	112	60-138	1.70	(< 20)

Print Date: 03/08/2018 3:38:49PM

Matrix Spike Summary

Original Sample ID: 1436139
MS Sample ID: 1436140 MS
MSD Sample ID: 1436141 MSD

Analysis Date: 03/05/2018 18:29
Analysis Date: 03/05/2018 19:21
Analysis Date: 03/05/2018 19:38
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837003

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloroform	0.500U	30.0	29.9	100	30.0	30.1	100	79-124	0.67	(< 20)
Chloromethane	0.500U	30.0	26.5	88	30.0	29.0	97	50-139	8.90	(< 20)
cis-1,2-Dichloroethene	0.500U	30.0	30.2	101	30.0	30.1	100	78-123	0.20	(< 20)
cis-1,3-Dichloropropene	0.250U	30.0	30.7	102	30.0	31.2	104	75-124	1.70	(< 20)
Dibromochloromethane	0.250U	30.0	32	107	30.0	31.5	105	74-126	1.40	(< 20)
Dibromomethane	0.500U	30.0	30	100	30.0	30.4	101	79-123	1.30	(< 20)
Dichlorodifluoromethane	0.500U	30.0	27.2	91	30.0	26.8	89	32-152	1.40	(< 20)
Ethylbenzene	0.500U	30.0	31.7	106	30.0	31.4	105	79-121	0.98	(< 20)
Freon-113	5.00U	45.0	46.3	103	45.0	46.1	102	70-136	0.32	(< 20)
Hexachlorobutadiene	0.500U	30.0	32	107	30.0	31.8	106	66-134	0.63	(< 20)
Isopropylbenzene (Cumene)	0.500U	30.0	32.4	108	30.0	32.4	108	72-131	0.09	(< 20)
Methylene chloride	2.50U	30.0	28.6	95	30.0	28.9	96	74-124	1.20	(< 20)
Methyl-t-butyl ether	5.00U	45.0	44.7	99	45.0	45.6	101	71-124	1.90	(< 20)
Naphthalene	0.500U	30.0	32.5	108	30.0	34.1	114	61-128	4.80	(< 20)
n-Butylbenzene	0.500U	30.0	32.8	109	30.0	31.2	104	75-128	4.90	(< 20)
n-Propylbenzene	0.500U	30.0	33.2	111	30.0	32.5	108	76-126	2.10	(< 20)
o-Xylene	0.500U	30.0	31.6	105	30.0	31.6	105	78-122	0.00	(< 20)
P & M -Xylene	1.00U	60.0	63.5	106	60.0	63.3	106	80-121	0.22	(< 20)
sec-Butylbenzene	0.500U	30.0	32.7	109	30.0	31.9	106	77-126	2.40	(< 20)
Styrene	0.500U	30.0	31.5	105	30.0	31.8	106	78-123	0.95	(< 20)
tert-Butylbenzene	0.500U	30.0	32.8	109	30.0	31.6	105	78-124	4.00	(< 20)
Tetrachloroethene	0.500U	30.0	31.8	106	30.0	30.2	101	74-129	5.10	(< 20)
Toluene	0.500U	30.0	30.3	101	30.0	29.4	98	80-121	3.00	(< 20)
trans-1,2-Dichloroethene	0.500U	30.0	29.8	99	30.0	30.0	100	75-124	0.67	(< 20)
trans-1,3-Dichloropropene	0.500U	30.0	31.5	105	30.0	31.6	105	73-127	0.48	(< 20)
Trichloroethene	0.500U	30.0	30.6	102	30.0	30.8	103	79-123	0.94	(< 20)
Trichlorofluoromethane	0.500U	30.0	30.6	102	30.0	30.0	100	65-141	1.90	(< 20)
Vinyl acetate	5.00U	30.0	26.8	89	30.0	27.0	90	54-146	0.82	(< 20)
Vinyl chloride	0.0750U	30.0	28.4	95	30.0	28.4	95	58-137	0.00	(< 20)
Xylenes (total)	1.50U	90.0	95	106	90.0	94.9	105	79-121	0.15	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.4	98	30.0	29.7	99	81-118	1.20	
4-Bromofluorobenzene (surr)		30.0	30.2	101	30.0	30.3	101	85-114	0.20	
Toluene-d8 (surr)		30.0	30.3	101	30.0	29.8	99	89-112	1.80	

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Matrix Spike Summary

Original Sample ID: 1436139
MS Sample ID: 1436140 MS
MSD Sample ID: 1436141 MSD

QC for Samples: 1180837001, 1180837003

Analysis Date:
Analysis Date: 03/05/2018 19:21
Analysis Date: 03/05/2018 19:38
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS17630
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: FDR
Analytical Date/Time: 3/5/2018 7:21:00PM

Prep Batch: VXX31988
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 3/5/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 03/08/2018 3:38:49PM

Method Blank

Blank ID: MB for HBN 1777134 [VXX/31991]
Blank Lab ID: 1436251

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001, 1180837002

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	93.8	50-150		%

Batch Information

Analytical Batch: VFC14062
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 3/6/2018 4:48:00PM

Prep Batch: VXX31991
Prep Method: SW5030B
Prep Date/Time: 3/6/2018 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [VXX31991]
Blank Spike Lab ID: 1436254
Date Analyzed: 03/07/2018 00:11

Spike Duplicate ID: LCSD for HBN 1180837 [VXX31991]
Spike Duplicate Lab ID: 1436255
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001, 1180837002

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.982	98	1.00	0.975	98	(60-120)	0.64	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	94.8	95	0.0500	97.5	98	(50-150)	2.70	

Batch Information

Analytical Batch: **VFC14062**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31991**
Prep Method: **SW5030B**
Prep Date/Time: **03/06/2018 08:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1777070 [XXX/39120]
Blank Lab ID: 1436024

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	88.3	60-120		%

Batch Information

Analytical Batch: XFC14077
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 3/6/2018 11:50:00AM

Prep Batch: XXX39120
Prep Method: SW3520C
Prep Date/Time: 3/5/2018 12:09:11PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [XXX39120]
Blank Spike Lab ID: 1436025
Date Analyzed: 03/06/2018 11:59

Spike Duplicate ID: LCSD for HBN 1180837 [XXX39120]
Spike Duplicate Lab ID: 1436026
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	18.9	95	20	19.4	97	(75-125)	2.50	(< 20)
Surrogates									
5a Androstane (surr)	0.4	98.5	99	0.4	104	104	(60-120)	5.40	

Batch Information

Analytical Batch: **XFC14077**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX39120**
Prep Method: **SW3520C**
Prep Date/Time: **03/05/2018 12:09**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1777070 [XXX/39120]
Blank Lab ID: 1436024

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	93.5	60-120		%

Batch Information

Analytical Batch: XFC14077
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 3/6/2018 11:50:00AM

Prep Batch: XXX39120
Prep Method: SW3520C
Prep Date/Time: 3/5/2018 12:09:11PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [XXX39120]
Blank Spike Lab ID: 1436025
Date Analyzed: 03/06/2018 11:59

Spike Duplicate ID: LCSD for HBN 1180837 [XXX39120]
Spike Duplicate Lab ID: 1436026
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	18.4	92	20	18.9	94	(60-120)	2.70	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	91.2	91	0.4	96.8	97	(60-120)	5.90	

Batch Information

Analytical Batch: **XFC14077**
Analytical Method: **AK103**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX39120**
Prep Method: **SW3520C**
Prep Date/Time: **03/05/2018 12:09**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1777091 [XXX/39123]
Blank Lab ID: 1436106

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180837001

Results by **8270D SIM LV (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	69.8	47-106		%
Fluoranthene-d10 (surr)	70.1	24-116		%

Batch Information

Analytical Batch: XMS10659
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 3/6/2018 4:36:00PM

Prep Batch: XXX39123
Prep Method: SW3520C
Prep Date/Time: 3/6/2018 8:02:03AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 03/08/2018 3:39:03PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1180837 [XXX39123]
Blank Spike Lab ID: 1436107
Date Analyzed: 03/06/2018 16:56

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180837001

Results by **8270D SIM LV (PAH)**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.93	96	(41-115)
2-Methylnaphthalene	2	1.79	90	(39-114)
Acenaphthene	2	1.78	89	(48-114)
Acenaphthylene	2	1.80	90	(35-121)
Anthracene	2	1.84	92	(53-119)
Benzo(a)Anthracene	2	1.88	94	(59-120)
Benzo[a]pyrene	2	1.72	86	(53-120)
Benzo[b]Fluoranthene	2	1.87	94	(53-126)
Benzo[g,h,i]perylene	2	1.67	84	(44-128)
Benzo[k]fluoranthene	2	1.78	89	(54-125)
Chrysene	2	1.92	96	(57-120)
Dibenzo[a,h]anthracene	2	1.56	78	(44-131)
Fluoranthene	2	1.91	95	(58-120)
Fluorene	2	1.81	91	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.71	86	(48-130)
Naphthalene	2	1.85	93	(43-114)
Phenanthrene	2	1.80	90	(53-115)
Pyrene	2	1.98	99	(53-121)
Surrogates				
2-Methylnaphthalene-d10 (surr)	2	75.6	76	(47-106)
Fluoranthene-d10 (surr)	2	77.6	78	(24-116)

Batch Information

Analytical Batch: **XMS10659**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX39123**
Prep Method: **SW3520C**
Prep Date/Time: **03/06/2018 08:02**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/08/2018 3:39:05PM

Matrix Spike Summary

Original Sample ID: 1180853001
MS Sample ID: 1436145 MS
MSD Sample ID: 1436146 MSD

QC for Samples: 1180837001

Analysis Date: 03/06/2018 17:37
Analysis Date: 03/06/2018 17:57
Analysis Date: 03/06/2018 18:18
Matrix: Water (Surface, Eff., Ground)

Results by **8270D SIM LV (PAH)**

		Matrix Spike (ug/L)				Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Acenaphthene	0.0762	2.02	1.83	87		2.02	1.90	90		48-114	3.60	(< 20)
Acenaphthylene	0.0504U	2.02	1.82	90		2.02	1.88	93		35-121	3.30	(< 20)
Anthracene	0.0504U	2.02	1.7	84		2.02	1.75	87		53-119	3.00	(< 20)
Benzo(a)Anthracene	0.0504U	2.02	1.32	66		2.02	1.36	68		59-120	3.00	(< 20)
Benzo[a]pyrene	0.0202U	2.02	.947	47	*	2.02	0.989	49	*	53-120	4.30	(< 20)
Benzo[b]Fluoranthene	0.0504U	2.02	1.05	52	*	2.02	1.08	54		53-126	2.70	(< 20)
Benzo[g,h,i]perylene	0.0504U	2.02	.788	39	*	2.02	0.812	40	*	44-128	3.00	(< 20)
Benzo[k]fluoranthene	0.0504U	2.02	.987	49	*	2.02	1.02	51	*	54-125	3.70	(< 20)
Chrysene	0.0504U	2.02	1.43	71		2.02	1.46	73		57-120	2.20	(< 20)
Dibenzo[a,h]anthracene	0.0202U	2.02	.817	41	*	2.02	0.834	41	*	44-131	2.20	(< 20)
Fluoranthene	0.0504U	2.02	1.59	79		2.02	1.63	81		58-120	2.20	(< 20)
Fluorene	0.170	2.02	1.95	88		2.02	2.01	91		50-118	3.10	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0504U	2.02	.786	39	*	2.02	0.812	40	*	48-130	3.20	(< 20)
Naphthalene	0.154	2.02	2.03	93		2.02	2.08	96		43-114	2.60	(< 20)
Phenanthrene	0.261	2.02	1.97	85		2.02	2.04	88		53-115	3.60	(< 20)
Pyrene	0.0504U	2.02	1.66	83		2.02	1.69	84		53-121	1.70	(< 20)
Surrogates												
2-Methylnaphthalene-d10 (surr)		2.02	1.52	76		2.02	1.56	77		47-106	2.10	
Fluoranthene-d10 (surr)		2.02	1.27	63		2.02	1.35	67		24-116	6.00	

Batch Information

Analytical Batch: XMS10659
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 3/6/2018 5:57:00PM

Prep Batch: XXX39123
Prep Method: 3520 Liq/Liq Ext for 8270 PAH SIM LV
Prep Date/Time: 3/6/2018 8:02:03AM
Prep Initial Wt./Vol.: 248.00mL
Prep Extract Vol: 1.00mL

Print Date: 03/08/2018 3:39:06PM

1180837

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

CHAIN-OF-CUSTODY RECORD

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

3990 Collins Way, Suite 100
Lake Oswego, OR 97035
(503) 223-6147

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800

2705 Saint Andrews Loop, Suite A
Pasco, WA 99301-3378
(509) 946-6309

Page 1 of 1

Laboratory SGS

Attn: Jillian

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	GRO	AK101	DRO/RRO AK102/AK103	VOCs EPA 8260C	PAHs EPA 8270D			Total Number of Containers	Remarks/Matrix
17787-DW1	① A-J	11:31	3/2/18		X	X	X	X	X	X			10	Groundwater
17787-WTB1	② A-C	11:31				X							1 box	Water Trip Blank-GRO
17787-WTB2	③ A-C	11:31							X				1 box	Water Trip Blank-VOCs

Project Information		Sample Receipt	
Project Number:	32-1-17787-007	Total Number of Containers	
Project Name:	9871 W. Margin Way	COC Seals/Intact? Y/N/NA	
Contact:	JJK, ROC	Received Good Cond./Cold	
Ongoing Project?	Yes ☑ No ☐	Delivery Method:	
Sampler:	JJK	(attach shipping bill, if any)	

Instructions	
Requested Turnaround Time:	Standard
Special Instructions:	

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature:	Signature:	Signature:
Time: 13:51	Time:	Time:
Printed Name: Jake Kesler	Printed Name:	Printed Name:
Date: 3/2/18	Date:	Date:
Company: Shannon+Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature:	Signature:	Signature:
Time: 1351	Time:	Time: 1351
Printed Name: Nicole Warner	Printed Name:	Printed Name: Nicole Warner
Date: 3/2/18	Date:	Date: 3/2/18
Company: SGS NW	Company:	Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

33 of 35

F-19-91/UR

cooler temp: 6.0 D41

CS: HD

No. 35376

e-Sample Receipt Form

SGS Workorder #: **1180837**

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Hand delivered
COC accompanied samples?	Yes	
Yes **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 6.0 °C Therm. ID: D41
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC.	Yes	
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1180837001-A	HCL to pH < 2	OK			
1180837001-B	HCL to pH < 2	OK			
1180837001-C	No Preservative Required	OK			
1180837001-D	No Preservative Required	OK			
1180837001-E	HCL to pH < 2	OK			
1180837001-F	HCL to pH < 2	OK			
1180837001-G	HCL to pH < 2	OK			
1180837001-H	HCL to pH < 2	OK			
1180837001-I	HCL to pH < 2	OK			
1180837001-J	HCL to pH < 2	OK			
1180837002-A	HCL to pH < 2	OK			
1180837002-B	HCL to pH < 2	OK			
1180837002-C	HCL to pH < 2	OK			
1180837003-A	HCL to pH < 2	OK			
1180837003-B	HCL to pH < 2	OK			
1180837003-C	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

ATTACHMENT 3

SITE PHOTOGRAPHS

Photo 1: Looking north at the former location of Monitoring Well MW-3. (April 5, 2019)

Photo 2: Looking south across the Property toward to the former location of Monitoring Well MW-2. (April 5, 2019)

9871 Margin Way
Wasilla, Alaska

PHOTOS 1 AND 2

May 2019 32-1-17787-007

Photo 3: Looking northwest at the concrete slab. (March 28, 2019 – photo provide by Coldfoot)

Photo 4: Looking northwest during removal of the floor slab. (April 8, 2019 – photo provided by Coldfoot)

ATTACHMENT 4

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Report 32-1-17787-007

Date: May 2019
To: Department of Transportation & Public Facilities
Attn: Mr. Christian Osentoski

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland