



November 28, 2022

Ms. Carey Foster
North Star Paving and Construction, Inc.
35743 Kenai Spur Hwy Ste A
Soldotna, AK 99669

RE: Groundwater and Soil Sampling Report – North Star Pit

Dear Ms. Foster:

This letter report was prepared by Trihydro Corporation (Trihydro) to summarize results from 2022 groundwater sampling at the North Star Paving Vehicle Maintenance and Welding Shop (Shop) in Soldotna, Alaska. Annual groundwater sampling has been completed as part of a monitoring program to assess groundwater impacts from a former Underground Injection Control (UIC) well connected to the Shop floor drain. The UIC was removed and decommissioned in 2020, along with accessible soil impacted from the UIC. To date, North Star Shop groundwater monitoring events completed by Trihydro include:

- August 20, 2020
- July 15, 2021
- September 22, 2022

September 2022 groundwater sampling was performed in accordance with Alaska Department of Environmental Conservation (ADEC) 2022 Field Sampling Guidance (Guidance), and as recommended in the Trihydro letter report summarizing 2021 groundwater sample results, dated January 4, 2022. September 2022 sampling field methods, analytical results, and analytical quality assurance and quality control are summarized below.

FIELD METHODS

Groundwater Sampling

Groundwater samples were collected from the four groundwater monitoring wells (MW-1, MW-3, MW-4, and MW-5) previously installed by Travis/Peterson Environmental Consulting, Inc. (TPECI) and located near the shop building UIC well (Figure 1).

Groundwater levels were measured prior to sampling and are presented in Table 1. Following gauging, a groundwater sampling pump was inserted in the well and field parameters including temperature,



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conductivity, pH, turbidity, oxidation reduction potential, and dissolved oxygen were measured in the well purge water. Groundwater samples were collected after field parameters stabilized according to the Guidance. Field parameter data is presented on Field Forms in Attachment 1. Groundwater samples were submitted to SGS Laboratory in Anchorage, Alaska, for the following analysis:

- Gasoline-range organics (GRO) by AK101
- Diesel-range organics (DRO) by AK102
- Residual-range organics (RRO) by AK103

ANALYTICAL RESULTS

Groundwater Analytical Results

Groundwater flow direction during the time of sampling was to the east-northeast, using elevations from a 2021 well survey, and water level gauging data collected prior to sampling. Figure 1 includes the potentiometric surface.

Groundwater sample analytical results are summarized in Table 2 and laboratory reports are included as Attachment 2. All groundwater results were below laboratory detection levels. Data from 2020 sampling showed low level DRO and RRO concentrations in MW-5 (south of the Shop), and RRO in MW-1 (east of the Shop) near the former UIC. Samples collected in 2021 and 2022 from the same wells were not detected for the same parameters.

ANALYTICAL QUALITY ASSURANCE AND QUALITY CONTROL

Trihydro completed a quality assurance/quality control (QA/QC) review of the analytical results. Results of the QA/QC review for data are summarized below and included in the Data Validation Reports and the ADEC Laboratory Data Review Checklists included in Attachment 3. The sample results are reported under SGS North America, Inc. (SGS) project number 1225799. The following summary highlights the data evaluation findings for this sampling event, and a more detailed quality control summary is included in Attachment 3:

- No data are rejected.
- The completeness objectives (greater than 85 percent complete) for this project are met.
- The precision and accuracy of the laboratory data, as measured by laboratory quality control indicators, suggest that the data are useable as qualified for the purposes of this project.
- The precision measurements for result comparisons between primary and duplicate field samples are acceptable for the purpose of this project and are marked with applicable qualifiers.



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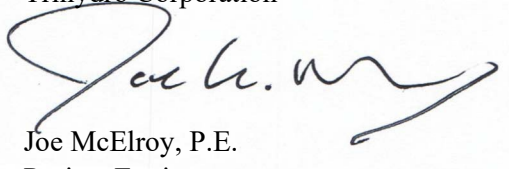
CONCLUSIONS AND RECOMMENDATIONS

The results of the 2022 Shop groundwater sampling event suggest UIC decommissioning and soil removal efforts effectively removed the source of GRO, DRO, and RRO in groundwater. No constituents were present above laboratory detection levels in 2021 or 2022 samples.

Trihydro recommends site closure and decommissioning of monitoring wells based on the repeat of non-detect data in 2021 and 2022.

If you have any questions, please contact me at (907) 262-2315.

Sincerely,
Trihydro Corporation



Joe McElroy, P.E.
Project Engineer

74A-001-002

Attachments

TABLES

**TABLE 1. GROUNDWATER ELEVATIONS
NORTH STAR PIT
SOLDOTNA, ALASKA**

| Location | Date Measured | Total Well Depth | Measuring Point Elevation | Depth to Water (Feet BMPE) | Groundwater Surface Elevation |
|-----------------|----------------------|-------------------------|----------------------------------|-----------------------------------|--------------------------------------|
| MW-1 | 9/22/2022 | 17.22 | 101.49 | 10.05 | 91.44 |
| MW-3 | 9/22/2022 | 22.00 | 101.75 | 10.34 | 91.41 |
| MW-4 | 9/22/2022 | 13.85 | 98.33 | 7.14 | 91.19 |
| MW-5 | 9/22/2022 | 14.01 | 97.47 | 6.36 | 91.11 |

Notes:

Groundwater in feet

BMPE = below measuring point elevation

**TABLE 2. WATER ANALYTICAL RESULTS
NORTH STAR PIT
SOLDOTNA, ALASKA**

| | | | Client Sample Id: | MW-1 | MW-3 | MW-4 | MW-5 | DUP-1 | Trip Blank |
|--------------|-------------------------|------|-------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | | | Lab Sample Id: | 1225799001 | 1225799002 | 1225799003 | 1225799004 | 1225799005 | 1225799006 |
| | | | Matrix: | Water (Surface, Eff., Ground) | Water (Surface, Eff., Ground) | Water (Surface, Eff., Ground) | Water (Surface, Eff., Ground) | Water (Surface, Eff., Ground) | Water (Surface, Eff., Ground) |
| | | | Date Sampled: | 9/22/22 12:15 PM | 9/22/22 10:45 AM | 9/22/22 10:05 AM | 9/22/22 11:30 AM | 9/22/22 8:00 AM | 9/22/22 7:55 AM |
| Analysis | Analyte | Unit | 18AAC75GW > | | | | | | |
| AK101 | Gasoline Range Organics | mg/L | 2.2 | 0.0500 U | 0.0500 U | 0.0500 U | 0.0500 U | 0.0500 U | 0.500 U |
| AK102/103 LV | Diesel Range Organics | mg/L | 1.5 | 0.326 U | 0.300 U | 0.300 U | 0.300 U | 0.306 U | NA |
| AK102/103 LV | Residual Range Organics | mg/L | 1.1 | 0.272 U | 0.210 J | 0.250 U | 0.250 U | 0.255 U | NA |

Notes:

Result exceeds 18 AAC 75.345(b) Table C: Groundwater Cleanup Levels.

- No Groundwater cleanup value.

U The analyte was not detected in the sample at the estimated detection limit (EDL).

J The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).

UJ The reported result is an estimated reporting limit. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).

NA Not Analyzed.

FIGURE



Image Cite: Google Earth

ANALYTE TABLE EXPLANATION

EXPLANATION

- EXISTING MONITORING WELL LOCATION
(INSTALLED DURING PHASE 2 INVESTIGATION)
- ⊕ REMOVED OR DESTROYED MONITORING WELL LOCATION

89.2 -- POTENTIOMETRIC SURFACE ELEVATION (DASHED WHERE APPROXIMATE)

● APPROXIMATE FORMER UNDERGROUND INJECTION CONTROL (UIC) WELL LOCATION

| | | | |
|-------------------------|------|------------|---|
| WELL DESIGNATION | MW-5 | 09/22/2022 | SAMPLE DATE |
| BENZENE | B | -- | VALUES ARE IN MICROGRAMS PER LITER (µg/L) |
| GASOLINE RANGE ORGANICS | G | ND(0.500) | VALUE IS IN MILLIGRAMS PER LITER (mg/L) |
| DIESEL RANGE ORGANICS | D | ND(0.300) | |
| RESIDUAL RANGE ORGANICS | R | ND(0.250) | |

FIGURE 1

GROUNDWATER SAMPLING MAP

**NORTH STAR PIT SITE
SOLDOTNA, ALASKA**

Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

Drawn By: BJ

Checked By: BF

Scale: 1" = 20'

Date: 10/12/2020

File: 74A_GWR-GWSAMPLING-2022

ATTACHMENT 1

FIELD FORMS AND FIELD NOTES

DAILY FIELD LOG

| | | |
|--|-------------------------|---------------|
| PROJECT NO: 74A-01-002 | PROJECT NAME: Northstar | DATE: 9/22/22 |
| NAME: J Yancy | | |
| FIELD ACTIVITIES: Ground water sampling | | |

| FROM | TO | DESCRIPTION |
|------|------|--|
| | 0700 | Begin Printing out Blank Field forms |
| | 0730 | Calibrate YSI DO = 9.75 mg/L SPC = 1.358 ms/cm PH-4 = 4.02 PH-7 = 7.03 |
| | 0903 | Arrived on site & Inspected wells wells appear to be in servicable condition. vehicle Parked on top of MW-5, spoke with person in shop & had vehicle moved for access |
| | 0926 | Begin sampling MW-04 - collected sample @ 1005 |
| | 1025 | Begin sampling MW-03 - collected sample @ 1045 |
| | 1109 | Begin sampling MW-05 - collected sample @ 1130 |
| | 1155 | Begin sampling MW-01 - collected sample @ 1215 also collected DUP-1 called time 0800 |
| | 1235 | Off site |

LOW-FLOW GROUNDWATER SAMPLING LOG

MONITORING WELL ID:

mw-01

Client: Northstar
Project Number: 74A-001-002

Project Name: Northstar

Project Location: Soldotna

Sample Date: 9-22-22

Weather: Overcast

Field Personnel: J Yancy

Static Water Level: 10.05

Well Diameter (in): 2"

Depth to Bottom (ft BTOC): 17.22

Pump Depth: 13.4

Approx. Screen Interval (ft bgs): Unknown

Expected Purge Rate (mL/min): 200-500 mL/min

Expected Purge Volume to Stability (gal): Unknown

Laboratory Analysis: GRO, DRO/RRO

| | |
|----------------------------------|-----------------------------|
| Containers/Preservatives: | 40ml voa w/HCL, 250ml w/HCL |
|----------------------------------|-----------------------------|

SAMPLE ID: MW-01

Duplicate Sample? (yes) (no)

Total Volume of

SAMPLE TIME: 1215

Duplicate ID: D07-1

Time: 0800

Water Purged

(gal): 2

[illegible]

LOW-FLOW GROUNDWATER SAMPLING LOG

Client: Northstar
 Project Number: 74A-001-002
 Project Name: Northstar
 Project Location: Soldotna
 Sample Date: 9-22-22
 Weather: Overcast
 Field Personnel: J Yancy

MONITORING WELL ID: MW-03

Static Water Level: 10.34
 Well Diameter (in): 2"
 Depth to Bottom (ft BTOC): 22.00
 Pump Depth: 16.17
 Approx. Screen Interval (ft bgs): Unknown
 Expected Purge Rate (mL/min): 200-500 mL/min
 Expected Purge Volume to Stability (gal): Unknown
 Laboratory Analysis: GRO, DRO/RRO
 Containers/Preservatives: 40ml voa w/HCL, 250ml w/HCL

SAMPLE ID: MW-03 Duplicate Sample? (yes) (no) Total Volume of Water Purged (gal): 2
 SAMPLE TIME: 1045 Duplicate ID: NA Time: —

| Time | Pumping Rate (mL/min) | Depth to Water (ft-bmp) < 0.33 ft Δ | Temp (deg C) — | Sp. Con. (mS/cm°C) +/- 3% | DO (mg/L) +/- 10% | pH (S.U.) +/- 0.1 | ORP (mV) +/- 10mV | Turbidity (NTU) +/- 10% | Comments Groundwater appearance, odor, NAPL, purge interruptions, etc. |
|------|-----------------------|--|-------------------|------------------------------|----------------------|----------------------|----------------------|----------------------------|---|
| 1025 | 325 | Begin | Pumping | | | | | | |
| 1030 | 325 | 10.34 | 10.2 | 0.270 | 5.78 | 6.37 | 88.0 | 155 | NO Sheen or odor noted |
| 1035 | 325 | 10.34 | 10.2 | 0.267 | 4.03 | 6.31 | 94.2 | 245 | " |
| 1040 | 325 | 10.34 | 10.1 | 0.265 | 3.14 | 6.28 | 97.1 | 254 | " |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

✓ ✓ ✓

MONITORING WELL ID: MW-04

| | |
|---|-----------------------------|
| Static Water Level: | 7.14 |
| Well Diameter (in): | 2" |
| Depth to Bottom (ft BTOC): | 13.85 |
| Pump Depth: | 10.5 |
| Approx. Screen Interval (ft bgs): | Unknown |
| Expected Purge Rate (mL/min): | 200-500 mL/min |
| Expected Purge Volume to Stability (gal): | Unknown |
| Laboratory Analysis: | GRO, DRO/RRO |
| Containers/Preservatives: | 40ml voa w/HCL, 250ml w/HCL |

[illegible]

LOW-FLOW GROUNDWATER SAMPLING LOG

Client: Northstar
 Project Number: 74A-001-002
 Project Name: Northstar
 Project Location: Soldotna
 Sample Date: 9-22-22
 Weather: Overcast
 Field Personnel: J Yancy

MONITORING WELL ID: MW-05

Static Water Level: 6.36
 Well Diameter (in): 2"
 Depth to Bottom (ft BTOC): 14.01
 Pump Depth: 10.18
 Approx. Screen Interval (ft bgs): UNKNOWN
 Expected Purge Rate (mL/min): 200-500 mL/min
 Expected Purge Volume to Stability (gal): UNKNOWN
 Laboratory Analysis: GRO, DRO/RRO
 Containers/Preservatives: 40ml voa w/HCL, 250ml w/HCL

SAMPLE ID: MW-05
 SAMPLE TIME: 1130

Duplicate Sample? (yes) (no)

Duplicate ID: NA

Time: —

Total Volume of
 Water Purged
 (gal): 1.5

| Time | Pumping Rate (mL/min) | Depth to Water (ft-bmp) < 0.33 ft Δ | Temp (deg C) --- | Sp. Con. (mS/cm ^C) +/- 3% | DO (mg/L) +/- 10% | pH (S.U.) +/- 0.1 | ORP (mV) +/- 10mV | Turbidity (NTU) +/- 10% | Comments Groundwater appearance, odor, NAPL, purge interruptions, etc. |
|------|-----------------------------|--|------------------------|---|-------------------------|-------------------------|-------------------------|-------------------------------|--|
| 1109 | 250 | | | | | | | | |
| 1115 | 250 | 6.37 | 10.0 | 0.419 | 0.46 | 6.49 | 84.5 | 106 | NO Screen or odor noted |
| 1120 | 250 | 6.37 | 10.3 | 0.420 | 0.34 | 6.41 | 89.9 | 75.8 | " |
| 1125 | 250 | 6.37 | 10.4 | 0.419 | 0.31 | 6.40 | 91.1 | 64.2 | " |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

✓

✓

✓

ATTACHMENT 2

LAB REPORT



Laboratory Report of Analysis

To: Trihydro Corporation
312 Tyee Street
Soldotna, AK 99669
(907)262-2315

Report Number: **1225799**

Client Project: **Northstar**

Dear Joe McElroy,

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 Justin 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.

Justin Nelson
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Trihydro Corporation**

SGS Project: **1225799**

Project Name/Site: **Northstar**

Project Contact: **Joe McElroy**

Refer to sample receipt form for information on sample condition.

MB for HBN 1844949 [XXX/47100] (1689555) MB

AK102- Surrogate recovery in the MB for 5a-androstane does not meet QC criteria; however, the surrogate recoveries in the samples are within criteria.

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

Print Date: 10/13/2022 8:48:42AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. 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, indemnification 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, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. 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 |
| TNTC | Too Numerous To Count |
| 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.

Sample Summary

| <u>Client Sample ID</u> | <u>Lab Sample ID</u> | <u>Collected</u> | <u>Received</u> | <u>Matrix</u> |
|-------------------------|----------------------|------------------|-----------------|-------------------------------|
| MW-01 | 1225799001 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |
| MW-03 | 1225799002 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |
| MW-04 | 1225799003 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |
| MW-05 | 1225799004 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |
| Dup-1 | 1225799005 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |
| Trip Blank | 1225799006 | 09/22/2022 | 09/23/2022 | Water (Surface, Eff., Ground) |

| <u>Method</u> | <u>Method Description</u> |
|---------------|-----------------------------|
| AK102 | DRO/RRO Low Volume Water |
| AK103 | DRO/RRO Low Volume Water |
| AK101 | Gasoline Range Organics (W) |

Print Date: 10/13/2022 8:48:46AM

Detectable Results Summary

Client Sample ID: **MW-03**
 Lab Sample ID: 1225799002
Semivolatile Organic Fuels

| <u>Parameter</u> | <u>Result</u> | <u>Units</u> |
|-------------------------|---------------|--------------|
| Residual Range Organics | 0.210J | mg/L |

Print Date: 10/13/2022 8:48:47AM

SGS North America Inc.

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

Member of SGS Group

Results of MW-01

Client Sample ID: **MW-01**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799001
 Lab Project ID: 1225799

Collection Date: 09/22/22 12:15
 Received Date: 09/23/22 10:14
 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 | 0.326 U | 0.652 | 0.217 | mg/L | 1 | | 10/07/22 04:40 |

Surrogates

| | | | | | | | |
|----------------------|------|--------|--|---|---|--|----------------|
| 5a Androstane (surr) | 77.4 | 50-150 | | % | 1 | | 10/07/22 04:40 |
|----------------------|------|--------|--|---|---|--|----------------|

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK102
 Analyst: HMW
 Analytical Date/Time: 10/07/22 04:40
 Container ID: 1225799001-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 230 mL
 Prep Extract Vol: 1 mL

| Parameter | Result Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|-------------------------|-------------|--------|-------|-------|----|------------------|----------------|
| Residual Range Organics | 0.272 U | 0.543 | 0.217 | mg/L | 1 | | 10/07/22 04:40 |

Surrogates

| | | | | | | | |
|--------------------------|------|--------|--|---|---|--|----------------|
| n-Triacontane-d62 (surr) | 82.5 | 50-150 | | % | 1 | | 10/07/22 04:40 |
|--------------------------|------|--------|--|---|---|--|----------------|

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK103
 Analyst: HMW
 Analytical Date/Time: 10/07/22 04:40
 Container ID: 1225799001-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 230 mL
 Prep Extract Vol: 1 mL

Results of MW-01

Client Sample ID: **MW-01**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799001
 Lab Project ID: 1225799

Collection Date: 09/22/22 12:15
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 00:50 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 71.1 | 50-150 | | % | 1 | | 09/30/22 00:50 |

Batch Information

Analytical Batch: VFC16275
 Analytical Method: AK101
 Analyst: PHK
 Analytical Date/Time: 09/30/22 00:50
 Container ID: 1225799001-C

Prep Batch: VXX39259
 Prep Method: SW5030B
 Prep Date/Time: 09/29/22 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of MW-03

Client Sample ID: **MW-03**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799002
 Lab Project ID: 1225799

Collection Date: 09/22/22 10:45
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Semivolatile Organic Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.300 U | 0.600 | 0.200 | mg/L | 1 | | 10/07/22 04:50 |

Surrogates

| | | | | | | | |
|----------------------|----|--------|--|---|---|--|----------------|
| 5a Androstane (surr) | 73 | 50-150 | | % | 1 | | 10/07/22 04:50 |
|----------------------|----|--------|--|---|---|--|----------------|

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK102
 Analyst: HMW
 Analytical Date/Time: 10/07/22 04:50
 Container ID: 1225799002-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Residual Range Organics | 0.210 J | 0.500 | 0.200 | mg/L | 1 | | 10/07/22 04:50 |

Surrogates

| | | | | | | | |
|--------------------------|------|--------|--|---|---|--|----------------|
| n-Triacontane-d62 (surr) | 76.4 | 50-150 | | % | 1 | | 10/07/22 04:50 |
|--------------------------|------|--------|--|---|---|--|----------------|

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK103
 Analyst: HMW
 Analytical Date/Time: 10/07/22 04:50
 Container ID: 1225799002-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Results of MW-03

Client Sample ID: **MW-03**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799002
 Lab Project ID: 1225799

Collection Date: 09/22/22 10:45
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 01:08 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 67.3 | 50-150 | | % | 1 | | 09/30/22 01:08 |

Batch Information

Analytical Batch: VFC16275
 Analytical Method: AK101
 Analyst: PHK
 Analytical Date/Time: 09/30/22 01:08
 Container ID: 1225799002-C

Prep Batch: VXX39259
 Prep Method: SW5030B
 Prep Date/Time: 09/29/22 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of MW-04

Client Sample ID: **MW-04**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799003
 Lab Project ID: 1225799

Collection Date: 09/22/22 10:05
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Semivolatile Organic Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.300 U | 0.600 | 0.200 | mg/L | 1 | | 10/07/22 05:00 |
| Surrogates | | | | | | | |
| 5a Androstane (surr) | 73.1 | 50-150 | | % | 1 | | 10/07/22 05:00 |

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK102
 Analyst: HMW
 Analytical Date/Time: 10/07/22 05:00
 Container ID: 1225799003-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|--------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Residual Range Organics | 0.250 U | 0.500 | 0.200 | mg/L | 1 | | 10/07/22 05:00 |
| Surrogates | | | | | | | |
| n-Triacontane-d62 (surr) | 76.2 | 50-150 | | % | 1 | | 10/07/22 05:00 |

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK103
 Analyst: HMW
 Analytical Date/Time: 10/07/22 05:00
 Container ID: 1225799003-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Results of MW-04

Client Sample ID: **MW-04**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799003
 Lab Project ID: 1225799

Collection Date: 09/22/22 10:05
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 01:26 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 83 | 50-150 | | % | 1 | | 09/30/22 01:26 |

Batch Information

Analytical Batch: VFC16275
 Analytical Method: AK101
 Analyst: PHK
 Analytical Date/Time: 09/30/22 01:26
 Container ID: 1225799003-C

Prep Batch: VXX39259
 Prep Method: SW5030B
 Prep Date/Time: 09/29/22 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of MW-05

Client Sample ID: **MW-05**
Client Project ID: **Northstar**
Lab Sample ID: 1225799004
Lab Project ID: 1225799

Collection Date: 09/22/22 11:30
Received Date: 09/23/22 10:14
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.300 U | 0.600 | 0.200 | mg/L | 1 | | 10/07/22 05:10 |
| Surrogates | | | | | | | |
| 5a Androstane (surr) | 74.9 | 50-150 | | % | 1 | | 10/07/22 05:10 |

Batch Information

Analytical Batch: XFC16362
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/07/22 05:10
Container ID: 1225799004-A

Prep Batch: XXX47100
Prep Method: SW3520C
Prep Date/Time: 10/04/22 16:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|--------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Residual Range Organics | 0.250 U | 0.500 | 0.200 | mg/L | 1 | | 10/07/22 05:10 |
| Surrogates | | | | | | | |
| n-Triacontane-d62 (surr) | 79.3 | 50-150 | | % | 1 | | 10/07/22 05:10 |

Batch Information

Analytical Batch: XFC16362
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/07/22 05:10
Container ID: 1225799004-A

Prep Batch: XXX47100
Prep Method: SW3520C
Prep Date/Time: 10/04/22 16:10
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/13/2022 8:48:48AM

J flagging is activated



Results of MW-05

Client Sample ID: **MW-05**
Client Project ID: **Northstar**
Lab Sample ID: 1225799004
Lab Project ID: 1225799

Collection Date: 09/22/22 11:30
Received Date: 09/23/22 10:14
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 01:44 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 67.3 | 50-150 | | % | 1 | | 09/30/22 01:44 |

Batch Information

Analytical Batch: VFC16275
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 09/30/22 01:44
Container ID: 1225799004-C

Prep Batch: VXX39259
Prep Method: SW5030B
Prep Date/Time: 09/29/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/13/2022 8:48:48AM

J flagging is activated

SGS North America Inc.

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

Member of SGS Group

Results of Dup-1

Client Sample ID: **Dup-1**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799005
 Lab Project ID: 1225799

Collection Date: 09/22/22 08:00
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Semivolatile Organic Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Diesel Range Organics | 0.306 U | 0.612 | 0.204 | mg/L | 1 | | 10/07/22 05:20 |
| Surrogates | | | | | | | |
| 5a Androstane (surr) | 72.4 | 50-150 | | % | 1 | | 10/07/22 05:20 |

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK102
 Analyst: HMW
 Analytical Date/Time: 10/07/22 05:20
 Container ID: 1225799005-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 245 mL
 Prep Extract Vol: 1 mL

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|--------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Residual Range Organics | 0.255 U | 0.510 | 0.204 | mg/L | 1 | | 10/07/22 05:20 |
| Surrogates | | | | | | | |
| n-Triacontane-d62 (surr) | 76.1 | 50-150 | | % | 1 | | 10/07/22 05:20 |

Batch Information

Analytical Batch: XFC16362
 Analytical Method: AK103
 Analyst: HMW
 Analytical Date/Time: 10/07/22 05:20
 Container ID: 1225799005-A

Prep Batch: XXX47100
 Prep Method: SW3520C
 Prep Date/Time: 10/04/22 16:10
 Prep Initial Wt./Vol.: 245 mL
 Prep Extract Vol: 1 mL

Results of Dup-1

Client Sample ID: **Dup-1**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799005
 Lab Project ID: 1225799

Collection Date: 09/22/22 08:00
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 02:03 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 69.4 | 50-150 | | % | 1 | | 09/30/22 02:03 |

Batch Information

Analytical Batch: VFC16275
 Analytical Method: AK101
 Analyst: PHK
 Analytical Date/Time: 09/30/22 02:03
 Container ID: 1225799005-C

Prep Batch: VXX39259
 Prep Method: SW5030B
 Prep Date/Time: 09/29/22 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Northstar**
 Lab Sample ID: 1225799006
 Lab Project ID: 1225799

Collection Date: 09/22/22 07:55
 Received Date: 09/23/22 10:14
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

| <u>Parameter</u> | <u>Result Qual</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> | <u>DF</u> | <u>Allowable Limits</u> | <u>Date Analyzed</u> |
|-----------------------------|--------------------|---------------|-----------|--------------|-----------|-------------------------|----------------------|
| Gasoline Range Organics | 0.0500 U | 0.100 | 0.0450 | mg/L | 1 | | 09/30/22 00:32 |
| Surrogates | | | | | | | |
| 4-Bromofluorobenzene (surr) | 78.9 | 50-150 | | % | 1 | | 09/30/22 00:32 |

Batch Information

Analytical Batch: VFC16275
 Analytical Method: AK101
 Analyst: PHK
 Analytical Date/Time: 09/30/22 00:32
 Container ID: 1225799006-A

Prep Batch: VXX39259
 Prep Method: SW5030B
 Prep Date/Time: 09/29/22 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1844539 [VXX/39259]
Blank Lab ID: 1688963

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1225799001, 1225799002, 1225799003, 1225799004, 1225799005, 1225799006

Results by AK101

| <u>Parameter</u> | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-----------------------------|----------------|---------------|-----------|--------------|
| Gasoline Range Organics | 0.0500U | 0.100 | 0.0450 | mg/L |
| Surrogates | | | | |
| 4-Bromofluorobenzene (surr) | 68.4 | 50-150 | | % |

Batch Information

Analytical Batch: VFC16275
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 9/29/2022 11:37:00PM

Prep Batch: VXX39259
Prep Method: SW5030B
Prep Date/Time: 9/29/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/13/2022 8:48:50AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225799 [VXX39259]
 Blank Spike Lab ID: 1688964
 Date Analyzed: 09/29/2022 23:19

Spike Duplicate ID: LCSD for HBN 1225799
 [VXX39259]
 Spike Duplicate Lab ID: 1688965
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225799001, 1225799002, 1225799003, 1225799004, 1225799005, 1225799006

Results by AK101

| Parameter | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | CL | RPD (%) | RPD CL |
|-----------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
| | Spike | Result | Rec (%) | Spike | Result | Rec (%) | | | |
| Gasoline Range Organics | 1.00 | 0.863 | 86 | 1.00 | 0.967 | 97 | (60-120) | 11.30 | (< 20) |
| Surrogates | | | | | | | | | |
| 4-Bromofluorobenzene (surr) | 0.0500 | | 79 | 0.0500 | | 107 | (50-150) | 30.60 | |

Batch Information

Analytical Batch: **VFC16275**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **PHK**

Prep Batch: **VXX39259**
 Prep Method: **SW5030B**
 Prep Date/Time: **09/29/2022 06:00**
 Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

Print Date: 10/13/2022 8:48:53AM

Method Blank

Blank ID: MB for HBN 1844949 [XXX/47100]
Blank Lab ID: 1689555

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1225799001, 1225799002, 1225799003, 1225799004, 1225799005

Results by AK102

| <u>Parameter</u> | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|-----------------------|----------------|---------------|-----------|--------------|
| Diesel Range Organics | 0.300U | 0.600 | 0.200 | mg/L |
| Surrogates | | | | |
| 5a Androstane (surr) | 49.7* | 60-120 | | % |

Batch Information

Analytical Batch: XFC16362
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 10/7/2022 1:33:00AM

Prep Batch: XXX47100
Prep Method: SW3520C
Prep Date/Time: 10/4/2022 4:10:20PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/13/2022 8:48:55AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225799 [XXX47100]
 Blank Spike Lab ID: 1689556
 Date Analyzed: 10/07/2022 01:42

Spike Duplicate ID: LCSD for HBN 1225799
 [XXX47100]
 Spike Duplicate Lab ID: 1689557
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225799001, 1225799002, 1225799003, 1225799004, 1225799005

Results by AK102

| Parameter | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | CL | RPD (%) | RPD CL |
|-----------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
| | Spike | Result | Rec (%) | Spike | Result | Rec (%) | | | |
| Diesel Range Organics | 20 | 17.6 | 88 | 20 | 17.2 | 86 | (75-125) | 2.20 | (< 20) |
| Surrogates | | | | | | | | | |
| 5a Androstane (surr) | 0.4 | | 74 | 0.4 | | 77 | (60-120) | 3.80 | |

Batch Information

Analytical Batch: **XFC16362**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **HMW**

Prep Batch: **XXX47100**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/04/2022 16:10**
 Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

Print Date: 10/13/2022 8:48:57AM

Method Blank

Blank ID: MB for HBN 1844949 [XXX/47100]
Blank Lab ID: 1689555

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1225799001, 1225799002, 1225799003, 1225799004, 1225799005

Results by AK103

| <u>Parameter</u> | <u>Results</u> | <u>LOQ/CL</u> | <u>DL</u> | <u>Units</u> |
|--------------------------|----------------|---------------|-----------|--------------|
| Residual Range Organics | 0.250U | 0.500 | 0.200 | mg/L |
| Surrogates | | | | |
| n-Triacontane-d62 (surr) | 66.3 | 60-120 | | % |

Batch Information

Analytical Batch: XFC16362
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 10/7/2022 1:33:00AM

Prep Batch: XXX47100
Prep Method: SW3520C
Prep Date/Time: 10/4/2022 4:10:20PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/13/2022 8:48:59AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1225799 [XXX47100]
 Blank Spike Lab ID: 1689556
 Date Analyzed: 10/07/2022 01:42

Spike Duplicate ID: LCSD for HBN 1225799
 [XXX47100]
 Spike Duplicate Lab ID: 1689557
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225799001, 1225799002, 1225799003, 1225799004, 1225799005

Results by AK103

| Parameter | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | CL | RPD (%) | RPD CL |
|--------------------------|--------------------|--------|---------|------------------------|--------|---------|------------|---------|---------|
| | Spike | Result | Rec (%) | Spike | Result | Rec (%) | | | |
| Residual Range Organics | 20 | 17.2 | 86 | 20 | 17.5 | 87 | (60-120) | 1.70 | (< 20) |
| Surrogates | | | | | | | | | |
| n-Triacontane-d62 (surr) | 0.4 | | 72 | 0.4 | | 73 | (60-120) | 1.90 | |

Batch Information

Analytical Batch: **XFC16362**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **HMW**

Prep Batch: **XXX47100**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/04/2022 16:10**
 Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

Print Date: 10/13/2022 8:49:01AM

AIRBILL 10539697

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed.....

Date

Grant Aviation

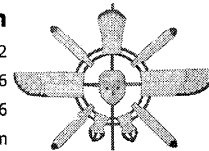
6420 Kulis Dr. Anchorage, AK 99502

Phone: 1 (888) 359-4726

Freephone: 1 (888) 359-4726

Email: res@flygrant.com

Web: http://www.flygrant.com/



FREIGHT DETAILS

FROM/TO: Kenai -> Anchorage International

Flight Departs: Sep 23 22 8:40 AM

Receiver: sgs
907-562-2343

Sender: trihydro
907-252-8366

Accepted: Fri, Sep 23 22 8:05:00 AM

| Description & Comment | Quan. | Wgt. | Handle Fee | Hazmat Fee | Total |
|-----------------------|-------|------|------------|------------|---------|
| Standard Freight | 1 | 30 | - | - | \$28.24 |
| Total Tax: | | | | | \$1.76 |
| Total Payments made: | | | | | \$30.00 |
| Total Unpaid: | | | | | \$0.00 |

Received in good condition by:

CUSTOMER COPY

AIRBILL 10539697

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed.....

Date

Grant Aviation

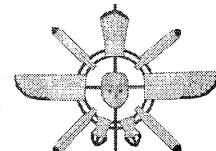
6420 Kulis Dr. Anchorage, AK 99502

Phone: 1 (888) 359-4726

Freephone: 1 (888) 359-4726

Email: res@flygrant.com

Web: http://www.flygrant.com/



FREIGHT DETAILS

FROM/TO: Kenai -> Anchorage International

Flight Departs: Sep 23 22 8:40 AM

Receiver: sgs
907-562-2343

Sender: trihydro
907-252-8366

Accepted: Fri, Sep 23 22 8:05:00 AM

| Description & Comment | Quan. | Wgt. | Handle Fee | Hazmat Fee | Total |
|-------------------------|-------|------|------------|------------|---------|
| Standard Freight | 1 | 30 | - | - | \$28.24 |
| TAX: Federal Excise Tax | | | | | \$1.76 |
| Total Payments made: | | | | | \$30.00 |
| Total Unpaid: | | | | | \$0.00 |

TERMS AND CONDITIONS

Consignemnt Note Text

Alert Expeditors Inc.

#421881

Citywide Delivery • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date

From

To

Collect ☐

Prepay ☐

Advance Charges ☐

Job #

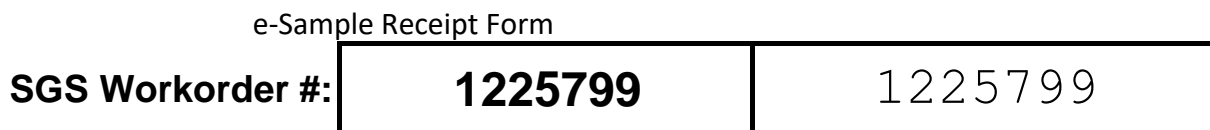
PO#

Shipped Signature

Total Charge

Received By:

25 of 27



F102b SRFpm 20210526



Sample Containers and Preservatives

| <u>Container Id</u> | <u>Preservative</u> | <u>Container Condition</u> | <u>Container Id</u> | <u>Preservative</u> | <u>Container Condition</u> |
|---------------------|---------------------|----------------------------|---------------------|---------------------|----------------------------|
| 1225799001-A | HCL to pH < 2 | OK | | | |
| 1225799001-B | HCL to pH < 2 | OK | | | |
| 1225799001-C | HCL to pH < 2 | OK | | | |
| 1225799001-D | HCL to pH < 2 | OK | | | |
| 1225799001-E | HCL to pH < 2 | OK | | | |
| 1225799002-A | HCL to pH < 2 | OK | | | |
| 1225799002-B | HCL to pH < 2 | OK | | | |
| 1225799002-C | HCL to pH < 2 | OK | | | |
| 1225799002-D | HCL to pH < 2 | OK | | | |
| 1225799002-E | HCL to pH < 2 | OK | | | |
| 1225799003-A | HCL to pH < 2 | OK | | | |
| 1225799003-B | HCL to pH < 2 | OK | | | |
| 1225799003-C | HCL to pH < 2 | OK | | | |
| 1225799003-D | HCL to pH < 2 | OK | | | |
| 1225799003-E | HCL to pH < 2 | OK | | | |
| 1225799004-A | HCL to pH < 2 | OK | | | |
| 1225799004-B | HCL to pH < 2 | OK | | | |
| 1225799004-C | HCL to pH < 2 | OK | | | |
| 1225799004-D | HCL to pH < 2 | OK | | | |
| 1225799004-E | HCL to pH < 2 | OK | | | |
| 1225799005-A | HCL to pH < 2 | OK | | | |
| 1225799005-B | HCL to pH < 2 | OK | | | |
| 1225799005-C | HCL to pH < 2 | OK | | | |
| 1225799005-D | HCL to pH < 2 | OK | | | |
| 1225799005-E | HCL to pH < 2 | OK | | | |
| 1225799006-A | HCL to pH < 2 | OK | | | |
| 1225799006-B | HCL to pH < 2 | OK | | | |
| 1225799006-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.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

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.

QN - Insufficient sample quantity provided.

ATTACHMENT 3

DATA VALIDATION & ADEC CHECKLIST

ADEC Contaminated Sites Program Laboratory Data Review Checklist

| | | | | | |
|-------------------------|--------------------------|-----------------------|-------------------|-------------------------|-------------------|
| Completed By: | Tanner Penrod | CS Site Name: | North Star Paving | Lab Name: | SGS North America |
| Title: | Assistant Staff Engineer | ADEC File No.: | | Lab Report No.: | 1225799 |
| Consulting Firm: | Trihydro Corp. | Hazard ID No.: | | Lab Report Date: | 10/13/2022 |

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

- a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.
- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

2. Chain of Custody (CoC)

- a. Is the CoC information completed, signed, and dated (including released/received by)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.
- b. Were the correct analyses requested?
Yes ☒ No ☐ N/A ☐
Analyses requested: Click or tap here to enter text.
Comments: Click or tap here to enter text.

3. Laboratory Sample Receipt Documentation

- a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
Yes ☒ No ☐ N/A ☐
Cooler temperature(s): 1.3
Sample temperature(s): Click or tap here to enter text.

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Comments: Click or tap here to enter text.

- b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?

Yes ☒ No ☐ N/A ☐

Comments: Samples received in good condition

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

- e. Is the data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

4. Case Narrative

- a. Is the case narrative present and understandable?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- b. Are there discrepancies, errors, or QC failures identified by the lab?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- c. Were all the corrective actions documented?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- d. What is the effect on data quality/usability according to the case narrative?

Comments: Data quality/usability deemed acceptable by project team

5. Sample Results

- a. Are the correct analyses performed/reported as requested on CoC?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

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b. Are all applicable holding times met?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?

Yes ☒ No ☐

Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?

Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

v. Data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

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b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

- iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments: Click or tap here to enter text.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

- vii. Is the data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

- i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

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- ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.
 - iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.
 - iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.
 - v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Click or tap here to enter text.
 - vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.
 - vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.
- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only
- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC, and laboratory samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.
 - ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes ☒ No ☐ N/A ☐
Comments: Surrogate recovery for AK102 in the MB for 5a-androstane does not meet QC criteria; however, the surrogate recoveries in the samples are within criteria. No data affected.

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- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- iv. Is the data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Data not affected and deemed acceptable by project team.

e. Trip Blanks

- i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- ii. Are all results less than LoQ or RL?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- iii. If above LoQ or RL, what samples are affected?

Comments: Click or tap here to enter text.

- iv. Is the data quality or usability affected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

f. Field Duplicate

- i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

- ii. Was the duplicate submitted blind to lab?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

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- iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water or air, 50% soil)

$$RPD (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐

Comments: Dup-01 was collected as a duplicate of MW-01. All RPD are less than the recommended 30%.

- iv. Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

g. Decontamination or Equipment Blanks

- i. Were decontamination or equipment blanks collected?

Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

- ii. Are all results less than LoQ or RL?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

- iii. If above LoQ or RL, specify what samples are affected.

Comments: Click or tap here to enter text.

- iv. Are data quality or usability affected?

Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

- a. Are they defined and appropriate?

Yes ☐ No ☐ N/A ☒

Comments:

QUALITY CONTROL SUMMARY- 1225799

Trihydro completed a quality assurance/quality control (QA/QC) review of the analytical results. Results of the QA/QC review for data are summarized below and are presented in the ADEC Laboratory Data Review Checklist. The sample results are reported under SGS North America project number 1225799. On September 23, 2022, four groundwater samples, one duplicate sample, and one trip blank were submitted in one batch to the laboratory. Dup-1 was collected as a duplicate of MW-01. The samples were received at the lab in good condition, preserved and at temperatures of 1.3°C.

Sample results were reviewed to determine overall precision of sampling and analysis as well as matrix homogeneity for all analytes. All percent recoveries (%R) and relative percent differences (RPD) from method blanks (MB), matrix spike/matrix spike duplicate (MS/MSD), laboratory control sample/duplicate (LCS/LCSD), and surrogate recoveries were within range except for surrogate recovery for AK102 in the MB for 5a-androstane does not meet QC criteria; however, the surrogate recoveries in the samples are within criteria. Data evaluated by project team and determined to not be affected. All duplicated sample RPDs were well below the recommended percentage (30% water). The following summary highlights the data evaluation findings for this sampling event:

- No data are rejected.
- The completeness objectives (greater than 85 percent complete) for this project are met with 100% completeness.
- The precision and accuracy of the laboratory data, as measured by laboratory quality control indicators, demonstrate that the data are useable as qualified for the purposes of this project.
- The precision measurements for result comparisons between primary and duplicate field samples are acceptable for the purpose of this project and are marked with applicable qualifiers.