MarkAir Hangar Site Characterization Report

ADEC File: 100.26.043
ADEC Hazard ID: 24293

Prepared for:
Alaska Department of Transportation & Public Facilities
Fairbanks International Airport
6450 Airport Way
Fairbanks, Alaska 99709

Prepared by:
Jacobs Engineering Inc.

Responsible ADEC-Qualified Environmental Professionals	
Report Authors	
Alec Jemison	Alec Jemison
Guy Wade	Guy Wade

TABLE OF CONTENTS

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

µg/L	microgram(s) per liter
µg/m^3	microgram(s) per cubic meter
^oF	degree(s) Fahrenheit
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
COC	contaminant of concern
COPC	contaminant of potential concern
CSM	conceptual site model
DOT&PF	Alaska Department of Transportation & Public Facilities
DRO	diesel-range organics
EDB	1,2-dibromoethane
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
FAI	Fairbanks International Airport
GCL	groundwater cleanup level
GRO	gasoline-range organics
HI	hazard index
IDW	investigation-derived waste
Jacobs	Jacobs Engineering Inc.
LCS	laboratory control sample
LOD	limit of detection
LOQ	limit of quantitation
MAH	MarkAir Hangar
MB	method blank
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
NAPL	non-aqueous phase liquid
ND	nondetect
PAH	polycyclic aromatic hydrocarbon
PCE	tetrachloroethylene
PID	photoionization detector
ppm	part(s) per million

RPD	relative percent difference
RRO	residual-range organics
SC	site characterization
SCL	soil cleanup level
SOP	standard operating procedure
TCE	trichloroethylene
TCP	trichloropropane
TMB	trimethylbenzene
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

This Site Characterization (SC) Report describes the recent effort to evaluate contamination at the MarkAir Hangar (MAH) facility (Alaska Department of Environmental Conservation [ADEC] File No. 100.26.043, Hazard ID 24293) located at the Fairbanks International Airport (FAI) (Figure A-1 in Appendix A). At the request of Alaska Department of Transportation & Public Facilities (DOT&PF), Jacobs Engineering Inc. (Jacobs) conducted the SC from 18 August through 31 August 2022. This SC is intended to further characterize and delineate soil and groundwater contamination associated with former leaking underground storage tanks (USTs) as well as to identify potential new sources of contamination.

1.1 PROJECT GOALS AND OBJECTIVES

The goals of the MAH 2022 SC were the following:

- Evaluate known and potential sources of contamination, particularly at the former locations of USTs 9, 12, 13, and 15
- Delineate previously detected groundwater contamination
- Use analytical results of soil borings and groundwater wells placed closest to the MAH building to inform the potential for vapor intrusion
- Determine whether any potential remedial actions are necessary to protect human health and the environment

The SC included investigation of soil and groundwater contamination through existing monitoring well, installation, development, sampling of new monitoring wells and temporary well points, and sampling of soil from the boreholes advanced at the new monitoring well locations. Six soil borings completed as monitoring wells (SB/MW-3b, SB/MW-6b, SB/MW-7b, SB/MW-8b, SB/MW-12, and SB/MW-13), one existing monitoring well (MW-4), and four temporary well points (TW-01, TW-02, TW-03, TW-04) were sampled to accomplish the project goals and objectives. The location of these wells is shown on the Sample Results and Site Summary Map (Figure A-3).

1.2 REPORT ORGANIZATION

This SC Report was written in accordance with the *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* (ADEC 2017a) and is organized as follows:

- **Section 1.0 Introduction** introduces the project, describes the SC goals, provides a current understanding of the physical setting of the site, and summarizes the site history.
- **Section 2.0 Site Characterization** describes the SC activities conducted in 2022, including soil boring placement and advancement, soil boring sampling and field screening, monitoring well placement, installation, development and sampling, temporary well point installation and sampling, analytical methods for soil and groundwater samples, utility clearance, site survey, and investigation-derived waste (IDW) management.
- **Section 3.0 Results** presents analytical results of soil samples, groundwater samples, the preliminary vapor intrusion evaluation, and the quality assurance assessment.
- **Section 4.0 Risk Evaluation** provides the cumulative risk evaluation and discusses contaminants of potential concern (COPCs) and contaminants of concern (COCs).
- **Section 5.0 Conceptual Site Model (CSM)** describes the human health CSM and ecological scoping forms prepared for the site.
- **Section 6.0 Conclusions and Recommendations** provides a summary of the results and recommendations for the site.
- **Section 7.0 References** presents citations for all sources referenced in the document.

In addition to the report body, the following appendices provide further information:

- **Appendix A: Figures** presents the report figures.
- **Appendix B: Photograph Log** presents photographs of site conditions and field activities.
- **Appendix C: Data Quality Assessment** provides the assessment of data quality received from the analytical laboratory, including qualification of estimated data and a review of quality control samples against regulatory, laboratory, and project guidelines noting any discrepancies or variances. This appendix includes a sample summary table, complete analytical results tables, and ADEC Laboratory Data Review Checklists.
- **Appendix D: CSM and Ecoscoping Forms** presents the ADEC human health scoping and graphic forms and the ADEC ecoscoping form used to determine possible exposure routes at the site.
- **Appendix E: Field Documentation** presents the field logbooks, soil boring logs, well completion forms, well development logs, and groundwater sampling forms.
- **Appendix F: Survey Data** summarizes survey data from site survey activities, including positional accuracy.

- **Appendix G: Cumulative Risk Calculation** presents the cumulative risk calculations with the hazard index (HI).
- **Appendix H: Investigation Derived Waste** presents the waste disposal form and analytical results from the IDW samples.

1.3 SITE DESCRIPTION AND BACKGROUND

The following subsections describe the location of the MAH site, the physical and environmental setting, previous investigations, and COPCs.

1.3.1 Site Location

MAH, currently known as the Everts Air Alaska facility, is located at 5525 Airport Industrial Road in Fairbanks, Alaska, or latitude 64.8106, longitude -147.8798 (ADEC 2022b). The lot is located west of the FAI runways, east of Airport Industrial Road, within the Fairbanks Meridian, Township 1 South, Range 2 West, Section 13, Block 1, Lot 6 (Figure A-1 in Appendix A). The property is owned by the DOT&PF and operated/managed by FAI.

1.3.2 Climate

Climate in the Fairbanks area is influenced by the bounding Brooks Range to the north and the Alaska Range to the south. The region experiences a continental climate with significant temperature variations. Winters are generally cold with subzero temperatures followed by warm summers with low humidity and precipitation. Based on mean normal data from the last 30 years (1991 to 2020), average monthly temperatures in Fairbanks range from a minimum of -8.3 degrees Fahrenheit (ºF) in January to a maximum of 62.9ºF in July. Mean monthly temperatures are typically below freezing from October to March. Total rainfall averaged 11.67 inches over the last 30-year period, with the maximum cumulative rainfall typically occurring in July. Total snowfall averaged 64.6 inches with the maximum cumulative snowfall typically occurring in November (Alaska Climate Data Center 2022).

1.3.3 Physical Setting, Geology, and Groundwater

The MAH site resides within the Chena and Tanana River floodplains, near the confluence of the Chena and Tanana Rivers, approximately 0.3-mile east-southeast of the Chena River and approximately 1.25 miles north of the Tanana River at its closest point to each river (Péwé 1982). The MAH resides on an industrial lot measuring approximately 19 acres and comprised primarily of paved, impervious surface. A small portion of the site is pervious (approximately 4 acres), comprised of grass, dirt, and gravel cover. Geology at the site consists of unconsolidated alluvium. A layer of mica-rich sandy silt, 1-foot to 15-foot-thick, is present in the Chena and Tanana River floodplains and could be encountered at the MAH site (Péwé 1982). The sandy silt layer is typically underlain by gravelly sands and sandy gravel layers of varying thicknesses. As Fairbanks lies within the zone of discontinuous permafrost, permafrost could also be encountered at the MAH site (Péwé 1982).

Based on historical investigations and groundwater flow data presented in the Phase II Environmental Site Assessment (ESA), depth to groundwater at the MAH site is typically encountered between approximately 10.5 and 13 feet below ground surface (bgs), with flow direction varying from northwest to southwest, and occasional southeasterly flow direction during high Chena River stage or north during seasonal breakup (DOT&PF 1993; DOT&PF 2005a). This is consistent with the high variability in groundwater flow directions calculated at other nearby DOT&PF FAI sites, including the MarkAir Warehouse, Hydrant Fuel System, and Drainage Pond sites (DOT&PF 2022a, 2022b, 2022c). Groundwater gradient can also vary between 0.0009 and 0.004 foot/foot within the floodplain area (DOT&PF 1993). The low groundwater gradient supports the idea that small changes in the groundwater system (e.g., increased infiltration, precipitation, changing river levels) may cause dramatic shifts in flow direction.

1.3.4 Ecology and Land Use

FAI occupies over 3,500 acres in interior Alaska and is located 4 miles southwest of downtown Fairbanks. The lands surrounding FAI are mainly owned by the State of Alaska and the military with some land available for commercial and residential development. The Fairbanks NorthStar

Burrough surrounding FAI has an approximate population of 95,655 residents (U.S. Census Bureau 2020).

Everts Air Cargo is currently using the MAH site, providing both cargo and passenger air service throughout Alaska. The site is highly developed and mostly comprised of asphalt and gravel surfaces. MAH is not located within an ecologically sensitive area. No known endangered or threatened species are present or known to exist at the site or surrounding area.

1.3.5 Flora and Fauna

FAI is located in interior Alaska in an area where plant life is subjected to short summers and long winters with extreme cold temperatures. Vegetation varies highly within Fairbanks, low lying areas typically have mosses, sage grasses, alders, willows, and black spruce while the high elevations have less moss and grass with a transition in tress to birch, white spruce, aspen, and poplar.

A wide variety of animal life exists in the Fairbanks area. Alaska Department of Fish & Game (ADF&G) notes that more than 150 species of birds and 30 mammal species can be seen in the Fairbanks area (ADF&G 2023). The most common sightings include ravens, moose, red squirrels, and snowshoe hares.

Although flora and fauna are abundant in interior Alaska, the developed nature of the MAH site is not conducive to wildlife. Areas containing vegetation include a small portion along the east side of the site comprised of grass and maintained by the DOT&PF (Figure A-2). Due to a lack of habitat and food sources, continued presence of fauna is not expected. However, the occasional bird or mammal could be a temporary presence as it passes through the site.

1.3.6 Site History and Previous Investigations

Ten historic USTs (USTs 5, 6, 7, 9, 10, 12, 13, 14, 15, and M-01) were installed at the MAH site between 1974 and 1980 (ADEC 2022b). Contents of the USTs included aviation gasoline (USTs 5 and M-01), diesel (USTs 6, 9, and 14), unleaded gasoline (UST 7), waste oil (UST 10), gasoline (UST 12), and diesel heating fuel (USTs 13 and 15). In 1991, cleanup actions

were pursued in response to a spill at UST 13. Excavation of contaminated soil led to the discovery of diesel-contaminated soil at a depth ranging from 6.5 feet bgs to 12 feet bgs. Following the cleanup actions, MarkAir hired a contractor to perform tank tightness test on several of the USTs. USTs 9 and 10 were discovered to be leaking when they failed tank tightness tests (DOT&PF 1993).

In 1992, closure and removal of all 10 USTs at the MAH site occurred between August and October. Phase I and II ESAs were conducted simultaneous to tank closures and removals. During the closure and removal of the tanks, 4 of the 10 USTs were confirmed to be leaking USTs, as evidenced by gashes in USTs 9 and M-01 and stained soil observed in excavations at USTs 10 and 13. Further evidence of potential spills due to overfilling was also observed at UST 5 (DOT&PF 1993). The USTs were removed over a total of nine excavations. USTs 6 and 7 were removed together in one single excavation, whereas all other USTs were excavated in separate excavations. Analytical soil samples were taken from the excavations and results determined contaminated soil was left in situ. Specifically, diesel-contaminated soil was left in place at the excavation sites for USTs 9 and 15, and diesel, gasoline, benzene, and total benzene, toluene, ethylbenzene, and xylenes (BTEX)-contaminated soil was left in place at the excavation site for USTs 6 and 7 (DOT&PF 1993).

In April 1993, the ADEC Northern Region office drafted a letter to the MarkAir summarizing findings from the Phase I and Phase II ESAs requesting that MarkAir conduct a release investigation to identify potential groundwater contamination, assess the lateral and vertical extent of soil and groundwater contamination, and develop a corrective action plan for management of in situ and ex situ soil contamination (ADEC 1993). The letter specifically suggested that a groundwater monitoring network be installed to assess upgradient pollutant sources, determine the extent of contamination at the UST sources, and determine if the contamination is migrating downgradient.

In June 1993, nine monitoring wells were installed on the MarkAir properties (MAH and MarkAir Warehouse) to assess contamination in groundwater (ADEC 2022b). Monitoring wells MW-1 through MW-5 were installed on the MAH site. In 2002, MW-5 was decommissioned and replaced with MW-6 (DOT&PF 2005a). In a 2003 groundwater sampling event, volatile

organic compounds (VOCs) were detected in groundwater at MW-3, with 1,1-dibromoethene (EDB) detected slightly above the applicable 2003 ADEC groundwater cleanup level (GCL). Other COCs included trichloroethylene (TCE) at MW-2, residual-range organics (RRO) at MW-5 (now MW-6), and lead across the site (DOT&PF 2005a).

Between September and November 2004, an SC was conducted at the MAH, focusing on the areas of former USTs 6, 7, 9, 10, 12, 13, and 15 and contamination left in situ (DOT&PF 2005a). Temporary well points were installed at former USTs 6 and 7 (WP-10), UST 10 (WP-11N [15]), UST 12 (WP-12), and UST 15 (WP-13). Soil boreholes completed as monitoring wells were also installed at locations of former UST 9 (MW-7) and UST 13 (MW-8). Groundwater was also sampled at MW-1, MW-3, and MW-6. Results of the SC, when screened against the latest ADEC soil cleanup levels (SCLs) and GCLs (ADEC 2021), indicated the following:

- At former USTs 6 and 7, naphthalene was detected in groundwater at concentrations greater than the ADEC GCL (0.0017 milligrams per liter [mg/L]).
- At former UST 10, naphthalene concentrations exceeded the ADEC GCL at the deeper interval in nested well point WP-11N, from 25 to 35 feet bgs. However, the shallow-screened well did not contact the water table and a shallow sample could not be collected.
- At the former UST 9 location, benzene, ethylbenzene, total xylenes, 1-methylnaphthalene, and naphthalene were detected in soil at concentrations greater than the ADEC migration to GCLs at the groundwater interface (approximately 10 feet bgs) and diesel-range organics (DRO), benzene, ethylbenzene, 1- and 2-methylnaphthalene, naphthalene, and total xylenes were detected in groundwater at concentrations greater than ADEC GCLs.
- At former UST 12, benzene, ethylbenzene, naphthalene, and total xylenes were detected in groundwater at concentrations greater than ADEC GCLs.
- At former UST 13, gasoline-range organics (GRO), DRO, benzene, ethylbenzene, 1- and 2-methylnaphthalene, naphthalene, and total xylenes were detected in groundwater above the ADEC GCLs.
- At former UST 15, DRO, ethylbenzene, and naphthalene were detected in groundwater above the ADEC GCLs.
- At MW-6, lead was detected at a concentration exceeding the ADEC GCL.

Based on results of the 2004 SC, the following was recommended:

- A request for No Further Action at the former UST 6 and 7 locations

- Further characterization and delineation of contamination in groundwater lateral to MW-7 (former UST 9) and no further investigation of soil at former UST 9 because contaminated soil was already excavated from the area in 1992
- Sampling of the shallow groundwater interval at WP-11N (UST 15; former UST 10) once the groundwater table rises
- Continued monitoring of contamination in groundwater at former USTs 12, 13, and 15 (DOT&PF 2005a)

A groundwater monitoring event was performed in September 2005, including sampling of wells WP-11N, WP-12, WP-13, MW-7, and MW-8. Monitoring well MW-7 was found to contain free product (diesel) and was not sampled. The free product was concluded to be a result of remobilization of the release from UST 9 and not an additional release. All other groundwater samples were collected and submitted to the laboratory for analysis of GRO, DRO, BTEX, and VOCs. Results indicated benzene, ethylbenzene, naphthalene, and total xylenes at concentrations greater than the latest ADEC GCLs (ADEC 2021) at WP-12 and MW-8 (DOT&PF 2005b).

In October 2006, a groundwater monitoring effort ensued with sampling of monitoring wells MW-3, MW-4, MW-6, and MW-8 (DOT&PF 2006). Sampling was also attempted at well points WP-12 and WP-13 and monitoring well MW-7. However, neither well point produced enough recharge to collect a sample. MW-7 was not sampled due to the presence of product measuring approximately 1 foot thick. However, groundwater samples collected at MW-3, MW-4, MW-6, and MW-8 were submitted to the laboratory for analysis of GRO, DRO, and BTEX. Analytical results indicated GRO, DRO, and benzene at concentrations greater than the latest ADEC GCLs (ADEC 2021) at MW-8.

In March 2019, ADEC issued a letter to DOT&PF requesting additional investigation at MAH for USTs 9, 12, 13, and 15 (ADEC 2019a). The letter requested further delineation of groundwater contamination; inclusion of lead as a site COC; removal of free product to the maximum extent possible; repair, redevelopment, or replacement of well points WP-12 and WP-13 based on the reason for lack of recharge; and a survey of all wells. DOT&PF issued a response to ADEC's request for a work plan in May 2019, indicating a work plan would be

forthcoming (DOT&PF 2019). ADEC acknowledged the response in a letter dated June 2019 (ADEC 2019b). The location of these USTs is shown on the Site Location Map (Figure A-2).

On 7 July 2022, Jacobs conducted a preliminary site visit to observe existing site conditions and inventory and evaluate the condition of existing monitoring wells. Multiple wells were either missing or had been destroyed and were no longer viable. Wells MW-3 and MW-4 were not found and are believed to have been destroyed by heavy equipment, based on their locations within the parking lots. Wells MW-7 and MW-8 were not located and appeared to have been covered by the building footprint and destroyed during building renovations. Well MW-6 was located in the parking lot with no protective casing or cover and was filled in with gravel and thus unviable. The locations of wells MW-6, MW-7, and MW-8 is shown on Figure A-3. The ADEC-approved 2022 MAH SC Work Plan (DOT&PF 2022) reflected these findings and included decommissioning and replacement of these previously existing wells, if found, as part of the 2022 SC field effort.

COCs previously identified for the site based on results of historical investigations and monitoring events include the following:

- Fuels: GRO, DRO, RRO
- VOCs: benzene, ethylbenzene, xylenes, EDB, and TCE
- Polycyclic aromatic hydrocarbons (PAHs): naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene
- Lead

Although the COCs listed were not detected in both soil and groundwater during previous investigations, both soil and groundwater samples collected for the purposes of the SC were submitted for analysis of all COCs. In addition, although 1,2-dichloroethane is considered a potential fuel additive to aviation gasoline, it has not previously been detected at the site and is not considered a COC. Samples collected during this SC were therefore not submitted for analysis of 1,2-dichloroethane.

1.4 SOIL AND GROUNDWATER SCREENING LEVELS

Screening levels for soil and groundwater were obtained from the latest revision of Title 18 of the Alaska Administrative Code (AAC), Chapter 75 (ADEC 2021) as specified in the MAH SC Work Plan. Groundwater sample results were evaluated against the ADEC Table C human health GCLs. Soil boring sample analytical results were evaluated against the most stringent of ADEC Table B1 and B2 Method Two SCLs for either human health or migration to groundwater for the under 40-inch zone (ADEC 2021). Project screening levels proposed for soil and groundwater COCs at the MAH site, along with laboratory method limits of detection (LODs), are summarized in Table 1-1.

Table 1-1
Screening Levels for MAH Site COCs in Soil and Groundwater

Analyte	Method	ADEC GCL[1] (µg/L)	ADEC SCL[2] (mg/kg)
GRO	AK101	2,200	300
DRO	AK102	1,500	250
RRO	AK103	1,100	11000
Benzene	SW8260D	4.6	0.022
Ethylbenzene	SW8260D	15	0.13
EDB	SW8260D-SIM	0.075	0.00024
TCE	SW8260D	2.8	0.011
Total Xylenes	SW8260D	190	1.5
1-Methylnaphthalene	SW8270D-SIM	11	0.41
2-Methylnaphthalene	SW8270D-SIM	36	1.3
Naphthalene	SW8270D-SIM	1.7	0.038
Lead	SW8260B	15	400

Notes:
[1] 18 AAC 75. Table C human health GCLs (ADEC 2021).
[2] 18 AAC 75. For GRO and DRO, cleanup levels obtained from Table B2, Method Two SCLs, migration to groundwater. For all others, cleanup levels obtained from Table B1, Method Two SCLs, migration to groundwater (ADEC 2021).
For definitions, refer to the Acronyms and Abbreviations section.

1.5 RISK EVALUATION

For the cumulative risk evaluation, COPCs were determined by screening analytical soil results against one-tenth the ADEC Table B2 Method Two human health screening levels for the under 40-inch zone, and by screening analytical groundwater results against one-tenth the ADEC Table C human health GCLs (ADEC 2021). Contaminants that exceeded one-tenth the applicable risk screening level were considered COPCs. The highest concentration of the COPC

remaining at the site was input into ADEC's online cumulative risk calculator to determine if there was a risk to human health from site contaminants. Cumulative risk at the site was considered unacceptable if carcinogenic risk was calculated at a level greater than 1×10^{-5} or if noncarcinogenic risk was calculated at an HI exceeding 1. If cumulative risk was considered unacceptable, then COCs were deduced from the list of COPCs based on whether the contaminant was considered a primary risk driver of overall cumulative risk.

1.5.1 Petroleum Range Contaminants

Petroleum range chemical results were not included as inputs to the calculation, as these are a mixture of chemicals including both carcinogenic and noncarcinogenic elements. The Total Petroleum Hydrocarbon Criteria Working Group identified a specific chemical within the petroleum fractions contributing carcinogenic and noncarcinogen risk (ADEC 2018). These indicator chemicals included volatile chemicals such as BTEX, PAHs, metals (e.g., lead) and site-specific chemicals such as EDB, 1,2-dichloroethane, and methyl tert-butyl ether.

1.5.2 Lead

Lead was not included in the risk calculations. Lead cleanup levels are site-specific and based on land use. Per ADEC guidance, the screening threshold for lead for commercial or industrial land use is 800 milligrams per kilogram (mg/kg); therefore, lead in soil was screened against this value to determine the appropriateness for inclusion as a COC. For groundwater, lead was screened against the cleanup level presented in Table C of 18 AAC 75 to determine if it should be considered a COC. Further discussion of COPCs and COCs can be found in Section 4.4.

A CSM for human health was developed based on results of the screening process. An ecological scoping form was also completed for the site based on the screening results. The CSM and ecological scoping form are discussed in Section 5.0.

1.6 IDW SOIL AND GROUNDWATER SCREENING LEVELS

To inform waste handling, transport, storage, treatment and disposal methods, results of individual constituent analysis in IDW soil and water were screened against Resource

Conservation Recovery Act levels for toxicity characteristics (40 Code of Federal Regulations 261, Subpart C) using the Rule of 20 (Environmental Protection Agency [EPA] 2016).

(intentionally blank)

2.0 SITE CHARACTERIZATION

Fields activities for the MAH SC were conducted from 18 August through 31 August 2022. SC tasks included mobilization and site setup; utility clearance; drilling soil borings; field screening and collecting subsurface soil samples; installing, developing, and sampling wells; recording visual and olfactory observations; collecting survey data; managing IDW; and site restoration and demobilization.

Section 2.1 describes deviations to the MAH SC Work Plan, and Sections 2.2 through 2.7 describe 2022 site activities and results. Site photographs are provided in Appendix B. Field documentation, including soil boring logs, monitoring well installation forms, monitoring well development forms, groundwater sampling data sheets, and field logbooks used to record daily activities provide additional details in Appendix E.

2.1 WORK PLAN DEVIATIONS

Deviations from the MAH SC Work Plan included relocation of soil borings and monitoring wells to avoid utility conflicts. The following sampling locations were moved away from their original locations:

- MW-4b was removed from the drilling plan when MW-4 was located and deemed viable for sampling.
- MW-8b was relocated 15–20 feet north of the planned location to avoid underground electrical and water lines.
- MW-12 was relocated 5 feet north to avoid a sewer line.
- MW-13 was relocated 15 feet north-northwest of the proposed location to avoid a high traffic area.

2.2 SOIL BORINGS AND SAMPLING

Utility clearance at the MAH site occurred on 18 August 2022 and SC drilling activities were conducted from 24 August through 27 August 2022. Drilling activities and access to the site were coordinated with the FAI operations office and Everts Air Cargo staff. During the field effort, six soil borings were completed (SB-3b, SB-6b, SB-7b, SB-8b, SB-12, and SB-13), with all borings advanced to groundwater and completed as monitoring wells. Placement of each soil

boring and monitoring well is shown on Figure A-3. Placement rationale, soil boring and monitoring well pairing, and depth are described in Table 2-1.

Table 2-1
Sampling Point Placement and Rationale

Soil Boring ID	Corresponding Monitoring Well	Placement	Placement Rationale
SB-3b	MW-3b	Northeast or former MW-3, which was destroyed or covered over, west of main hangar and crossgradient/ upgradient depending upon flow direction from former USTs.	To confirm lack of contamination at northwest edge of site or at a downgradient location from potential sources.
SB-6b	MW-6b	Just west of former MW-6, which was destroyed or covered over, downgradient of UST 15 and 13.	To test for lack of contamination at northern edge of site or at a crossgradient/downgradient location from former UST 15.
SB-7b	MW-7b	Just east of former well MW-7, which was destroyed or covered over with building construction; east of former UST 9.	Move east outward from new building footprint, based on utility locates; to characterize contamination in soil and groundwater at former UST 9.
SB-8b	MW-8b	Just west of former well MW-8, which was destroyed or covered over with building construction; west of former UST 13.	Move slightly west outward from new building footprint, based on utility locates; to characterize contamination in soil and groundwater at former UST 13.
SB12	MW-12	At former well point WP-13 and UST 15.	To characterize contamination in soil and groundwater at former UST 15.
SB13	MW-13	At former well point WP-12 and UST 12.	To characterize contamination in soil and groundwater at former UST 12.

Note:
For definitions, refer to the Acronyms and Abbreviations section.

All soil borings were drilled by GeoTek Alaska using a GeoProbe Model 7822dt direct-push drill rig with 45/37, MacroCore, and hollow-stem auger tooling. All soil borings and well installations were performed in accordance with the SC Work Plan. Soil samples were obtained using continuous core decontaminated between uses. The soil sampling methodology followed ADEC *Field Sampling Guidance* (ADEC 2022a), standard operating procedure (SOP) DOT-FAI-SOP-3000, and the procedures explained in the approved SC Work Plan (ADOT&PF 2022). The soil boring logs provide additional drilling and sampling information (Appendix B).

Based on the soil borings and well construction diagrams, two cross sections were created showing the lithology, wells, and exceedances across the site (Figures A-3 and A-4). Analytical samples from soil borings were collected at the interval corresponding to the location of the

highest photoionization detector (PID) readings and at the groundwater interface. Table 2-2 shows the depth of samples collected as well as the PID results.

Table 2-2
Soil Sample Depths and Field Screening Results

Boring or Well ID	Total Depth (feet bgs)	Sampled Intervals (feet bgs)	PID Reading (ppm)	Sample ID
SB-3b	20	2 to 4	2.1	22MAH-SB3b-SO-2-4
		9.5 to 10	1.0	22MAH-SB3b-SO-9.5-10
SB-6b	20	2 to 4	3.3	22MAH-SB6b-SO-2-4
		9.5 to 10	2.7	22MAH-SB6b-SO-9.5-10
SB-7b	18.33	6 to 8	6.9	22MAH-SB7b-SO-6-8
		10 to 10.5	1.2	22MAH-SB7b-SO-10-10.5
		10 to 10.5	1.2	22MAH-SB7b-SO-10-10.5A
SB-8b	20	6 to 8	4.6	22MAH-SB8b-SO-6-8
		10 to 10.5	1.2	22MAH-SB8b-SO-10-10.5
		10 to 10.5	1.2	22MAH-SB8b-SO-10-10.5A
SB-12	20	2 to 4	2.1	22MAH-SB12-SO-2-4
		10.5 to 11	1.6	22MAH-SB12-SO-10.5-11
SB-13	20	8 to 10	11.1	22MAH-SB13-SO-8-10
		10 to 10.5	-	22MAH-SB13-SO-10-10.5

Notes:
- = No PID result was collected for this depth.
For definitions, refer to the Acronyms and Abbreviations section.

During the field effort, 12 primary soil samples and 2 duplicate soil samples were submitted to SGS North America, Inc. in Anchorage, Alaska. Samples were analyzed for GRO by Alaska Method AK101, DRO by AK102, RRO by AK103, VOCs (mid- and low-level) by EPA Method 8260, EDB via EPA Method 8260-SIM, PAHs by Method 8270-SIM, and lead by EPA Method 6020.

2.3 MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLING

At the MAH site, seven groundwater monitoring wells with prepacked screens and four temporary wells were installed using the drilling methods described in Section 2.2, and developed in accordance with the ADEC *Monitoring Well Guidance* (ADEC 2013a) and DOT-FAI-SOP-1200 *Well Installation and Development*. Depths to groundwater in each well are listed in Table 2-3.

Table 2-3
Depth to Groundwater

Monitoring Well	Sample ID	Depth to Groundwater[1] (feet bgs)
MW-3b	22MAH-MW3b-GW	7.15
MW-4	22MAH-MW4-GW	11.0
MW-6b	22MAH-MW6b-GW	7.31
MW-7b	22MAH-MW7b-GW	10.6
MW-8b	22MAH-MW8b-GW	10.85
MW-12	22MAH-MW12-GW	11.8
MW-13	22MAH-MW13-GW	10.78
TW-01	22MAH-TW01-GW	13.04
TW-02	22MAH-TW02-GW	14.58
TW-03	22MAH-TW03-GW	10.45
TW-04	22MAH-TW04-GW	10.8

Notes:
[1] Depth to groundwater were recorded prior to sampling.
For definitions, refer to the Acronyms and Abbreviations section.

The depth to groundwater was relatively consistent between wells. The groundwater gradient across the site is very shallow and trends west-northwest (Figure A-3). Groundwater samples were collected from each of the 11 wells; 11 primary samples along with 2 field duplicates were collected and analyzed for GRO by AK101, DRO by AK102, RRO by AK103, VOCs (mid- and low-level) by EPA Method 8260, EDB via EPA Method 8260-SIM, PAHs by Method 8270-SIM, and lead by EPA Method 6020A.

2.4 WELL DECOMMISSIONING

During the SC, two previously installed monitoring wells (MW-3 and MW-6) were located and deemed unviable due to their condition. These monitoring wells were decommissioned in accordance with JE-SOP-1220 *Well Decommissioning* provided in the MAH Work Plan. MW-3 was decommissioned on 26 August 2022 and MW-6 was decommissioned on 27 August 2022. The decommissioning logs can be found in Appendix E.

2.5 SURVEYING

Surveying of monitoring well locations and elevations was performed by Lounsbury & Associates, Inc. The report summarizing their work is provided in Appendix D.

2.6 WASTE MANAGEMENT

Nonhazardous disposable personal protective equipment and sampling materials were bagged and disposed of at Fairbanks North Star Borough landfill. Monitoring well purge water and decontamination water was combined and temporarily stored onsite at an FAI waste storage facility and placed in labeled 55-gallon drums until laboratory results were received. Similarly, soil cuttings from drilling were combined and placed in labeled 55-gallon drums.

Contents of each IDW water and soil drum were sampled and characterized. The analytical results of the waste sampling were used to characterize water for disposal purposes. Disposal of IDW purge and decontamination water is currently being coordinated with US Ecology. An ADEC Transport, Treatment and Disposal Approval Form for the contaminated media will be completed and submitted to ADEC for approval. The approval form will be included in Appendix H of this report.

Jacobs will manage the final transport and disposal of IDW water and IDW soil using an appropriate offsite treatment, storage, and disposal subcontractor (e.g., US Ecology).

Proper documentation will be generated for each waste stream prior to shipment to the final disposal facility and will include information required to comply with federal, state, and local regulations for labeling, transport, shipment, and disposal of wastes from the site. This will include bills of lading and hazardous or nonhazardous manifests, if applicable. FAI will sign manifests and certificates of disposal will be generated after deposit of waste streams at the final disposal facility. Waste manifests and certificates of disposal will be included in the groundwater monitoring report.

(intentionally blank)

3.0 RESULTS

Analytical results from the soil and groundwater investigation were screened against levels presented in Section 2.0. This section presents results of the screening analysis as well as the risk evaluation. Full analytical results tables are presented in the Data Quality Assessment (Appendix C).

3.1 SOIL INVESTIGATION RESULTS

No analytical soil sample results exceeded the ADEC SCLs.

3.2 GROUNDWATER INVESTIGATION RESULTS

Results of the groundwater investigation indicated concentrations of 1,2,4-trimethylbenzene (TMB), naphthalene, DRO, and RRO in exceedance of the ADEC GCLs at TW01. In addition, results for chloroform in groundwater samples from TW01, MW3b, MW8b, and MW13 exceeded the ADEC GCLs (Table 3-1).

Table 3-1
Groundwater Sample Result Exceedances

Location ID	Sample ID	Analyte	ADEC GCL[1] (mg/L)	Result (mg/L)
TW01	22MAH-TW01-GW	1,2,4-TMB	0.056	0.0951 JS+
		Chloroform	0.0022	0.0197 JS+
		Naphthalene	0.0017	0.0507 JS+
		DRO	1.5	5.3
		RRO	1.1	2.11
MW3b	22MAH-MW3b-GW	Chloroform	0.0022	0.0174
MW8b	22MAH-MW8b-GW	Chloroform	0.0022	0.00457
	22MAH-MW8b-GWA	Chloroform	0.0022	0.00391
MW13	22MAH-MW13-GW	Chloroform	0.0022	0.00394

Notes:
JS+ = The result was an estimated value biased high (+) because at least one surrogate failed recovery criteria for the sample.
For definitions, refer to the Acronyms and Abbreviations section.

Additionally, 1,2,3-trichloropropane (TCP) was nondetect (ND) at the LOD; however, the LOD exceeded the ADEC GCL. This is discussed in Section 3.4.

3.3 VAPOR INTRUSION EVALUATION

Results from groundwater samples collected at monitoring wells MW-7b and MW-8b were screened against the ADEC Groundwater Target Levels presented in Appendix F of the 2017 ADEC *Vapor Intrusion Guidance for Contaminated Sites* (ADEC 2017b). Only analytes with detected results from each well and for which a target threshold is presented in the ADEC Vapor Intrusion Guidance (ADEC 2017b) were evaluated in this screening process. Table 3-2 presents results of the screening of groundwater results against ADEC groundwater target threshold values for vapor intrusion. Based on the screening of 2022 groundwater results, no contaminants at either MW-7b or MW-8b were detected at levels exceeding the vapor intrusion guidance target levels for groundwater.

Table 3-2
Screening of Groundwater Results for Vapor Intrusion Potential

Well ID	Analyte	Residential Groundwater Target Level[1] (µg/L)	Commercial Groundwater Target Level[1] (µg/L)	Groundwater Result (µg/L)
MW-7b	Chloroform	8.1	36	0.53 J
	Toluene	19,000	81,000	0.447
MW-8b	Benzene	16	69	0.22 J
	Chloroform	8.1	36	4.57
	Chloromethane	260	1,100	0.43
	PCE	58	240	0.75 J
	Naphthalene	46	200	0.0451 J

Notes:
[1] Groundwater target levels are those listed in Appendix F of the ADEC Vapor Intrusion Guidance (ADEC 2017b).
J = The result is an estimated value because it was greater than the detection limit but less than the LOQ.
For definitions, refer to the Acronyms and Abbreviations section.

Non-aqueous phase liquid (NAPL) was identified at monitoring well MW-7, located at the northeast corner of the hangar, during the 2005 and 2006 groundwater monitoring efforts (DOT&PF 2005b, 2006). Construction after the 2006 monitoring event rendered well MW-7 inaccessible due to overlying structures, and could not be sampled during the 2022 SC. Historical sampling results from MW-7 during the 2004 SC, prior to the discovery of product in the well, indicated benzene in soil at 10 feet bgs at a concentration of 0.0316 mg/kg, and benzene in groundwater at a concentration of 130 micrograms per liter (µg/L) (DOT&PF

2005a), which exceeds both the residential and commercial ADEC groundwater target levels for vapor intrusion (16 µg/L and 69 µg/L, respectively).

3.4 QUALITY ASSURANCE ASSESSMENT

Jacobs performed this data quality review and completed an ADEC Laboratory Data Review Checklist for records associated with the analytical data. The Jacobs Project Chemist performed a completeness check to verify data packages included all requested information. All analytical data were reviewed, including the chain-of-custody and sample receipt records, laboratory case narratives, and laboratory data. Analytical data were reviewed for methodology, sample holding times, laboratory blanks, limits of quantitation (LOQ), LODs, detection limits, laboratory control sample (LCS) recoveries, and precision. Other quality control parameters (initial calibration, continuing calibration, tuning, internal standards, interference check solutions, post-digestion spikes, and serial dilutions) were reviewed by means of the laboratory case narrative. The following qualifiers were applied during the review:

E The result was ND and the LOD exceeds the GCL or SCL.

B The analyte was detected in the method blank (MB), trip blank, or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

J The result is an estimated value because it was greater than the detection limit but less than the LOQ.

JL The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCS duplicate sample or both.

JS The result was an estimated value biased high (+) or low (-) because at least one surrogate failed recovery criteria for the sample.

JD The result was qualified because the relative percent difference (RPD) between the primary sample and the field duplicate sample exceeded 50 percent for soil or 30 percent for water and at least one of the results is greater than the LOD. If one result was a detect and the other was a ND, then the LOD value was used in the RPD calculation for the ND result.

Project specific MS/MSDs were not required for this project; however, they were included in the analytical batches as the methods required. MS/MSDs were only evaluated if they were performed on samples from this project.

The overall quality of the data was acceptable. All reported data were considered usable with limitations discussed in this report and in the ADEC Laboratory Data Review Checklists (Appendix F). The following quality control issues were identified during the review:

- **Groundwater – Monitoring Wells**
  - Several ND results had LODs greater than the ADEC GCLs for 1,2,3-TCP and were qualified E. Results exceeding the GCLs may be reported as ND. 1,2,3-TCP was not a COC. Data quality was minimally affected.
  - 1-Methylnaphthalene, 2-methylnaphthalene, fluoranthene, and phenanthrene (SW8270SIM) were detected in the MB affecting sample 22MAH-MW4-GW. Affected sample results were qualified B, high bias. All affected sample results were significantly less than the ADEC GCLs. The data quality was minimally affected.
  - 1-Methylnaphthalene and 2-methylnaphthalene (SW8270SIM) were detected in the MB affecting samples 22MAH-MW12-GW, 22MAH-MW13-GW, 22MAH-MW3b-GW, 22MAH-MW7b-GW, 22MAH-MW8b-GW, and 22MAH-MW8b-GWA. All affected samples were qualified B, biased high. All affected results were significantly less than the ADEC GCLs. Data quality was minimally affected.
  - RRO (AK103) was detected in the MB affecting samples 22MAH-MW8b-GWA, 22MAH-MW8b-GW, 22MAH-MW3b-GW, and 22MAH-MW12-GW. All affected sample results were qualified B, biased high. All affected results were slightly less than the ADEC GCL. Data quality was minimally affected.
  - The primary/field duplicate (22MAH-MW8b-GW/22MAH-MW8b-GWA) had RPDs greater than 30 percent for 1-methylnaphthalene, 2-methylnaphthalene (SW8270SIM), DRO (AK102), and lead (SW6020). All affected samples were qualified JD, unknown bias. All affected results were less than the ADEC GCL. Data quality was minimally affected.
- **Groundwater – Temporary Monitoring Wells**
  - Several ND results had LODs greater than the GCL for 1,2,3-TCP and were qualified E. Results exceeding the ADEC GCL may be reported as ND. 1,2,3-TCP was not a COC. Data quality was minimally affected.
  - 1-Methylnaphthalene, 2-methylnaphthalene, fluoranthene, and phenanthrene (SW8270SIM) were detected in the MB affecting samples 22MAH-TW02-GW, 22MAH-TW02-GWA, 22MAH-TW03-GW, 22MAH-TW04-GW, and 22MAH-TW6b-GW. Affected sample results were qualified B, high bias. All affected sample results were significantly less than the ADEC GCL. The data quality was minimally affected.
  - Surrogates, fluoranthene-d10 and 2-methylnaphthalene-d10 were recovered low in sample 22MAH-TW01-GW. The affected sample result was qualified JS-, biased low. All affected sample results were ND with LODs significantly less than the ADEC GCL. Data quality was minimally affected.

- For Methods AK101 and SW8260, the surrogate 4-bromofluorobenzene was recovered high in sample 22MAH-TW01-GW. All detected sample results were qualified JS+, biased high. Affected results were either significantly less than the ADEC GCL or exceeded the ADEC GCL by a factor of two or more. Data quality was minimally affected.

- **Soil Borings**
  - For Method SW8260 several ND results had LODs greater than the ADEC SCL for 1,1,1,2-tetrachloroethane, 1,2,3-TCP, 1,2-dibromo-3-chloropropane, EDB, 2-hexanone, bromomethane, chloroform, dibromochloromethane, dibromomethane, hexachlorobutadiene, TCE, vinyl chloride, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2,3-trichlorobenzene, 1,4-dichlorobenzene, naphthalene, and trans-1,3-dichloropropene and were qualified E. Results exceeding the SCL may be reported as ND.
  - GRO (AK101) and DRO (AK102) were detected in several MBs affecting samples 22MAH-SB8b-SO6-8, 22MAH-SB8b-SO10-10.5, 22MAH-SB8b-SO10-10.5A, 22MAH-TB01S, 22MAH-SB12-SO10.5.11, 22MAH-SB12-SO2-4, 22MAH-SB13-SO10-10.5, 22MAH-SB13-SO8-10, 22MAH-SB6b-SO9.5-10, 22MAH-SB6b-SO2-4, 22MAH-SB7b-SO10-10.5, 22MAH-SB7b-SO10-10.5A, 22MAH-SB7b-SO6-8, 22MAH-SB3b-SO9.5.10, and 22MAH-SB3b-SO2-4. All detected results were qualified B, biased high. All affected results were significantly less than the ADEC SCL. Data quality was minimally affected.
  - For Method SW8260, freon-11 was recovered high in the LCS affecting sample 22MAH-SB8b-SO10-10.5. All results were qualified JL+, biased high. The affected sample result was significantly less than the ADEC SCL. Data quality was minimally affected.
  - GRO (AK101) was detected in the trip blank affecting samples 22MAH-SB6b-SO9.5-10, 22MAH-SB6b-SO2-4, 22MAH-SB13-SO10-10.5, 22MAH-SB13-SO8-10, 22MAH-SB7b-SO10-10.5, 22MAH-SB7b-SO10-10.5A, 22MAH-SB7b-SO6-8, 22MAH-SB12-SO10.5-11, 22MAH-SB12-SO2-4, 22MAH-SB3b-SO9.5-10, 22MAH-SB3b-SO2-4, 22MAH-SB8b-SO6-8, 22MAH-SB8b-SO10-10.5, and 22MAH-SB8b-SO10-10.5A. All results were qualified B, biased high. Affected results were significantly less than the ADEC SCL. Data quality was minimally affected.

- **Wastewater**
  - Several ND results had LODs greater than the GCL for 1,2,3-TCP (SW8260) and were qualified E. Results exceeding the ADEC GCL may be reported as ND. 1,2,3-TCP was not a COC at this site. Data quality was minimally affected.
  - Lead (SW6020) was detected in the MB affecting samples 22MAH-DR01-WW, 22MAH-DR02-WW, 22MAH-DR03-WW, and 22MAH-DR04-WW. All affected samples were qualified B, biased high. All affected results were significantly less than the ADEC GCL. Data quality was minimally affected.

- **Waste Soil**

- For Method SW8260, several ND results had LODs greater than the ADEC SCL for 1,2,3-TCP, 1,2-dibromo-3-chloropropane, EDB, 1,1,1,2-tetrachloroethane, 2-hexanone, bromomethane, chloroform, dibromochloromethane, dibromomethane, hexachlorobutadiene, TCE, and vinyl chloride and were qualified E. Results exceeding the ADEC SCL may be reported as ND.
- For Method SW8270, several ND results had LODs greater than the SCL for 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dinitrophenol, 2,4-DNT, 2,6-DNT, 3,3'-dichlorobenzidine, 4-chloroaniline, hexachlorobenzene, hexachlorocyclopentadiene, hexachloroethane, naphthalene, nitrobenzene, n-nitrosodimethylamine, n-nitrosodi-n-propylamine and pentachlorophenol and were qualified E. Results exceeding the ADEC SCL may be reported as ND.
- GRO (AK101), bis(2-ethylhexyl)phthalate, and dibutyl phthalate (SW8270) were detected in the MB affecting sample 22MAH-DR-SO. Affected sample results were qualified B, biased high. All affected sample results were significantly less than the ADEC SCL. The data quality was minimally affected.
- GRO (AK101) was detected in the trip blank affecting sample 22MAH-DR-SO. The affected result was significantly less than the ADEC SCL. Data quality was minimally affected.

4.0 RISK EVALUATION

4.1 HUMAN HEALTH RISK

This section summarizes the calculated risk to human health for soil and groundwater. Cumulative risk was calculated in accordance with the ADEC *Procedures for Calculating Cumulative Risk* (ADEC 2018). Because the most recent monitoring event or site investigation prior to the 2022 SC occurred in 2006, cumulative risk was calculated using the most recently acquired soil and groundwater analytical data from the 2022 SC only. COPCs and COCs were derived as described in Section 2.2.

4.1.1 Soil Contaminants of Potential Concern

Because no contaminant concentrations in soil exceeded one-tenth the ADEC human health screening levels, no COPCs for soil were identified based on the analytical soil data acquired from the 2022 SC. Therefore, cumulative risk in soil was not calculated.

4.1.2 Groundwater Contaminants of Potential Concern

COPCs in groundwater include the following: GRO, DRO, RRO, lead, 1,1-dichloroethane, 1,2,4-TMB, 1,3,5-TMB, ethylbenzene, naphthalene, TCE, xylenes, and chloroform. These contaminants exceeded one-tenth the ADEC Table C human health GCLs (ADEC 2021).

Table 4-1 presents the calculated noncancer HI and carcinogenic risk values for groundwater by applicable receptor and COPC. Although groundwater exposure is considered a complete future pathway for the industrial worker, only the future residential scenario was evaluated because this is the most conservative receptor and because all pathways (ingestion, dermal contact, and inhalation) are considered complete for the future resident. For the future resident, groundwater calculations assume chronic exposures and a child receptor for noncarcinogenic effects. Outputs for the online calculators for potential future scenarios (resident [groundwater]) are included in Appendix G.

Table 4-1
MAH Human Health Risk Summary – Groundwater

COPC	Hazard Index	Carcinogenic Risk
Future Resident (age-adjusted)		
Chloroform	0.203	**8.92×10^{-5}**
1,1-Dichloroethane	0.000871	1.19×10^{-6}
Ethylbenzene	0.0125	6.74×10^{-6}
Naphthalene	**8.3**	**3.07×10^{-4}**
Trichloroethylene	0.119	6.87×10^{-7}
1,2,4-TMB	**1.71**	1.19×10^{-6}
1,3,5-TMB	0.483	Not applicable
Xylenes	0.911	Not applicable
Total HI/Risk	**12**	**4.05×10^{-4}**
ADEC HI/Risk Threshold	1	1×10^{-5}

Notes:
Bold values exceed the ADEC HI/carcinogenic risk threshold.
For definitions, refer to the Acronyms and Abbreviations section.

Key findings of the cumulative risk evaluation are as follows:

- Groundwater cumulative risk exceeds the ADEC threshold for carcinogenic risk. Total carcinogenic risk exceeds the ADEC threshold by a factor of approximately 31.
- Risk drivers include naphthalene, which accounts for nearly all the carcinogenic risk at 75.2 percent of the total, and chloroform, which accounts for an additional 21.9 percent of the total. All other COPCs contribute less than 3 percent total to the total carcinogenic risk.
- Total HI risk exceeds the ADEC threshold by a factor of 13.

To provide the most conservative results, Table 4-2 displays the groundwater cumulative risk calculations for future residential land use by risk type, and both sets of calculations assume chronic exposures and a child receptor for noncarcinogenic effects (Appendix G). The conservative future resident risk calculation results indicated risk from the contaminants detected onsite exceeded the cumulative carcinogenic risk standard of 1×10^{-5} across all exposure pathways and exceeded an HI of 1 for the cumulative noncarcinogenic risk standard across all exposure pathways. Despite the high HI and carcinogenic risk, it is unlikely that exposure will occur, because it is unlikely that residents will be at the MAH site in the future, and unlikely that future residents or future industrial, site, or commercial workers will come in contact with groundwater. Hypothetical future constructions workers could come in contact with groundwater, but no construction is planned for the site.

Table 4-2
ADEC Groundwater Cumulative Risk Calculations

Risk Type	Cumulative Risk
Ingestion HI – Child	0.927
Inhalation (volatiles) HI – Child	10.1
Dermal HI – Child	0.690
Total Noncarcinogenic HI – Child	**11.7**
ADEC HI Threshold	1
Ingestion Risk	9.79×10^{-5}
Inhalation (volatiles risk)	3.93×10^{-4}
Dermal Risk	1.55×10^{-6}
Total Cancer Risk	**4.05×10^{-4}**
ADEC Cancer Risk Threshold	1×10^{-5}

Notes:
Bold values exceed the ADEC HI/carcinogenic risk threshold.
For definitions, refer to the Acronyms and Abbreviations section.

4.1.3 Air Contaminants of Potential Concern

The vapor intrusion evaluation based on data from the 2022 SC did not indicate contaminants at concentrations exceeding the residential or commercial target levels in groundwater. However, historical benzene detections in groundwater at the northeast corner of the building suggest that benzene may be present at concentrations exceeding the residential and commercial vapor intrusion thresholds. Therefore, benzene is considered a COPC in indoor air. No COPCs were identified for outdoor air.

4.1.4 Site Contaminants of Concern

In groundwater, naphthalene, chloroform, and 1,2,4-TMB were identified as primary risk drivers and COCs based on the cumulative risk calculations. DRO and RRO were also identified as COCs because the maximum detected concentration of each exceeded the ADEC human health GCLs.

Prior investigations had identified GRO, benzene, ethylbenzene, xylenes, EDB, TCE, 1-methylnaphthalene, 2-methylnaphthalene, and lead as COCs. However, results for these contaminants were either ND or below the ADEC GCLs in all samples collected during the 2022 SC. No COCs were identified for soil or air.

4.2 ECOLOGICAL RISK

An ADEC ecoscoping form was completed to determine if further ecological screening was necessary for the MAH site (Appendix D). Based on data observed during the SC and results of ecoscoping, no further ecological evaluation is required. No direct visual impacts or acute toxicity from high concentrations of contaminants is present. In Section 2 of the scoping form, the only potential exposure route identified was potential bioaccumulation of lead taken up by soil invertebrates, which are in turn eaten by higher food-chain organisms. Finally, the assessment off-ramped in Section 3 of the form, as none of the criteria listed for habitat were applicable to the MAH site.

5.0 CONCEPTUAL SITE MODEL

ADEC human health CSM scoping and graphic forms have been developed for MAH and are provided in Appendix D. The purpose of the CSM is to describe and evaluate how humans, animals, and plants might contact contaminants at the MAH (ADEC 2014, 2017a).

5.1 POTENTIAL CONTAMINANT SOURCE

Historical USTs at the site were previously determined as the source of contamination at the MAH site. These USTs are shown on Figure A-2. Sources of solvent contamination (e.g., chloroform) are uncertain but could be from historical floor drains, if present, or improper handling and storage of solvent containers.

5.2 RELEASE MECHANISM

Leaks from historical USTs directly to subsurface soil remain the release mechanisms for fuel contamination at the site. Releases of solvents from aircraft parts cleaning or other mechanical operations has also occurred. Although the release mechanism is uncertain, direct discharge from floor drains directly to subsurface soil or groundwater is the most likely release mechanism. Impacted media includes groundwater.

5.3 LAND USE AND EXPOSURE ROUTES

The site is currently 25 percent paved and 75 percent gravel, with contamination present in groundwater at approximately 10 feet bgs. As a result, dermal absorption of contaminants in groundwater (i.e., naphthalene) would only become possible given future construction work at the site that disturbs pavement and exposes the subsurface. There are currently no plans for construction at the site.

Chloroform is present in groundwater and may introduce contaminants via indoor air based on preliminary vapor intrusion evaluation. Results indicate that chloroform may be present in indoor air at concentrations greater than the residential target threshold, indicating that under the hypothetical future resident scenario, this pathway is complete. However, the site is not

slated to become residential property, and therefore exposure is unlikely. Additionally, the preliminary evaluation for vapor intrusion only considered two monitoring wells and more data are needed to confirm if this pathway is complete.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The objectives of the SC were to further investigate soil and groundwater at USTs 9, 12, 13, and 15; delineate previously discovered groundwater contamination; and determine if remedial actions are necessary to protect human health and the environment. During 2022 SC activities, 12 primary (plus 2 duplicate) soil samples were collected from 6 soil borings, and 11 primary (plus 2 duplicate) groundwater samples were collected from 7 monitoring wells and 4 temporary wells.

In summary, soil contamination at MAH had no exceedances of the ADEC SCLs from any of the soil borings advanced during this investigation.

Groundwater contamination in water at MAH sampled from four groundwater wells exceeded the ADEC GCLs, summarized as follows:

- Results from the sample collected from TW01 exceeded the ADEC GCLs for 1,2,4-TMB, chloroform, naphthalene, DRO, and RRO.
- Results from the samples collected from MW3b, MW8b, and MW13 all exceeded the ADEC GCL for chloroform.

6.1 PETROLEUM CONTAMINATION

Temporary well TW01 represents the location of the most petroleum-based contamination observed in any one location during the SC, the source of which is believed to be lateral migration of groundwater contamination from leaking USTs. Contamination at TW01 is comprised primarily of fuel-related compounds (DRO, RRO, 1,2,4-TMB, and naphthalene), although chloroform was also detected and is discussed later in this section. The exceedances of 1,2,4-TMB, DRO, and RRO at TW01 were within one order of magnitude of the ADEC GCLs, while the concentration of naphthalene was within two orders of magnitude of the ADEC GCLs. The well is downgradient of MW-7 and MW-8, which are the former UST-9 (500-gallon diesel tank) and UST-13 (5,000-gallon diesel tank) locations, respectively. Product was encountered at MW-7 during the 2005 and 2006 groundwater monitoring events. Contamination previously detected in exceedance of the ADEC cleanup levels at MW-8 includes GRO, DRO, benzene, ethylbenzene, naphthalene, and xylenes. Similarly,

concentrations of naphthalene and DRO also exceeded ADEC GCLs at TW01, and GRO, ethylbenzene, and xylenes were detected at concentrations below ADEC GCLs.

Soil sample results from the SC confirm the absence of contamination at former locations of USTs 12 and 15, but could not confirm its absence at the former locations of USTs 9 and 13. Both MW-7 and MW-8 were destroyed during construction and their locations, and at present are beneath the building footprint, thereby inhibiting the ability to sample at the former locations of the two USTs, to remove free product from MW-7 if encountered, and ultimately to investigate and delineate contamination associated with the two former USTs. Although monitoring wells MW-7b and MW-8b were installed as close to MW-7 and MW-8 as possible during the 2022 SC, they may not be close enough to the original source to confirm the absence of soil contamination from former USTs 9 and 13. Ultimately, MW-7b and MW-8b were placed approximately 30 feet and 90 feet away from MW-7 and MW-8, respectively.

No fuel-related VOC exceedances were observed at MW-8b. Therefore, the historically-observed groundwater contamination associated with UST-13 is either completely beneath the building footprint, or MW-8b was not installed in a location directly downgradient enough of MW-8 to capture the contamination.

Results of MW-7b confirmed there is not an upgradient source for the fuel-related contamination previously observed at MW-7 (former UST-9) but the analytical results may not be representative of any contamination left in situ. The monitoring well was installed approximately 30 feet upgradient from MW-7 and former UST-9 location. Because product was discovered at MW-7 in previous investigations, the likelihood of residual contamination in soil, groundwater, and potentially soil gas in the vicinity of the former well is likely present but inaccessible.

6.2 CHLOROFORM CONTAMINATION

Chloroform in groundwater at TW01 and elsewhere around the site (i.e., MW-3b, MW-8b, and MW-13) can be sourced as either a primary ingredient in solvents or as a degradation product from tetrachloroethylene (PCE), likely resulting from releases associated with aircraft parts

cleaning operations and other mechanical work requiring solvent usage. The low-level concentrations (i.e., below ADEC GCLs) of PCE, TCE, and cis-dichloroethylene detected support the idea that solvents were historically used. These solvents could have been released from floor drains located inside buildings directly to subsurface soil or groundwater, or from improper handling of containers of solvents. Because the exact depth of the discharge point of suspected floor drains is unknown, it is also unknown if the discharge occurred directly to groundwater or in vadose zone soil.

The presence and pattern of chloroform exceedances at the MAH site supports the idea that chloroform was most likely released from buildings, as opposed to having been transported onsite from an offsite source via groundwater flow. Chloroform exceedances of ADEC GCLs occurred at TW01, MW-3B, MW-8b, and MW-13 (Figure A-3). Concentrations at TW01 and MW-3B, which are aligned more directly downgradient from the center of the former MAH building (when compared to other wells), were an order of magnitude greater than at the other monitoring wells. This supports idea of potential for releases of chloroform from the building itself, and most likely from floor drains. Notably, chloroform was ND at MW-4, TW02, TW03, and MW-6b, all of which are crossgradient from the center of the site buildings, again supporting the idea that chloroform transported via groundwater is sourced from the buildings. Detections of chloroform at other monitoring wells not in the direct flow path of groundwater, such as at MW-7b and MW-13, could be the result of minor spills or releases due to improper handling or usage of chloroform-containing solvents around the site.

Another potential source of chloroform contamination, though less likely, is disinfection of drinking water systems because chloroform is a disinfection byproduct often found in tap water (EPA 2000). Chloroform is also a common laboratory contaminant; however, no detections of chloroform were encountered in MBs from the laboratory, thereby confirming that chloroform is a site contaminant.

Although introduction of chloroform to groundwater is believed to be from parts cleaning and other mechanical operations that released the contaminant to floor drains, the physical properties of chloroform may complicate the ability to clearly identify the release mechanism and timeframe. The fact that chloroform was not detected in soil samples taken from soil

borings colocated with monitoring wells is unsurprising due to the low adsorption potential of the contaminant and slight solubility in water (EPA 2000). If chloroform were released from building floor drains as suspected, concentrations in groundwater at the source (i.e. directly beneath the building) may have the greatest concentrations. However, due to its slight solubility and due to the uncertainty surrounding the release timeframe, it is also possible that contamination from historical releases of chloroform could be mostly dispersed and transported downgradient.

6.3 VAPOR INTRUSION

Screening of groundwater results from the 2022 SC against ADEC groundwater target levels (ADEC 2017b) indicated VOCs detected at MW-7b and MW-8b do not pose a vapor intrusion risk at the detected concentrations. However, NAPL and benzene at concentrations exceeding the ADEC residential and commercial target levels for vapor intrusion were discovered at MW-7 during the 2004 SC, located under the northeast corner of the hangar. Data obtained from MW-7b, located approximately 30 feet upgradient from former MW-7, were ND for benzene and may not be representative of conditions at MW-7. Therefore, vapor intrusion should be considered a potential risk and further investigated.

6.4 RISK EVALUATION AND COCS

Cumulative risk exceeded the ADEC threshold for carcinogenic risk and noncarcinogenic risk in groundwater only. Primary risk drivers for carcinogenic risk are chloroform and naphthalene. Primary risk drivers for noncarcinogenic risk are naphthalene and 1,2,4-TMB.

Site COCs identified through this SC and historical investigations are as follows, for groundwater only:

- Fuels: GRO, DRO, RRO
- Fuel-related VOCs: benzene, ethylbenzene, xylenes, 1-methylnaphthalene, 2-methylnaphthalene, and 1,2,4-TMB
- Solvent-based VOCs: TCE and chloroform
- Metals: lead

No COCs were identified for soil or air. Further investigation of the potential for indoor air contamination is necessary to determine if site COCs will include additional contaminants in air. Based on results of the investigation, the following actions are recommended:

- Resume/continue groundwater monitoring at the MAH site for GRO, DRO, RRO, VOCs, PAHs, and lead.
- Investigate the source of chloroform contamination. Because a suspected source could be floor drains inside both buildings, it is recommended that historical as-builts be examined and building inspections be conducted to identify potential historical floor drains. Once/if identified, soil borings and groundwater samples should be collected from soil borings and groundwater wells placed at strategic locations downgradient (west-northwest) of the suspected floor drains.
- Install additional monitoring wells downgradient of MW-3b, located 30 feet from the property boundary to determine if chloroform contamination is being transported offsite.
- Delineate petroleum and solvent contamination in groundwater at TW01 by advancing temporary well points at strategic locations upgradient and downgradient of TW01. Downgradient temporary well placement should be west (between TW01 and MW-3), northwest (between TW01 and MW-3b), and north of TW01. Upgradient temporary well placement should be south, southeast, and northeast (between TW01 and MW-8b).
- Investigate the presence of product and soil contamination at the groundwater interface near the former location of UST-9. Drill a soil boring (to be completed as a monitoring well) in the immediate vicinity (e.g., within 5 feet) of former MW-7. Depending upon results of the MW-7 replacement and sampling, consider drilling soil borings and installing permanent or temporary well points to delineate contamination in soil and groundwater at the former MW-7 location. Recovery wells may be needed if NAPL is encountered.
- Evaluate the vapor intrusion pathway at the hangar due to the presence of NAPL and benzene at the northeast corner of the building. Because it is often difficult to distinguish vapor intrusion potential inside a building containing petroleum products for operational purposes, both subslab and the breathing space should simultaneously be sampled. Contaminants detected in indoor breathing zone air that are corroborated with subslab sample results would be evidence of vapor intrusion from subsurface contamination, whereas uncorroborated detections in breathing zone air only would be evidence of contamination from building operations. Therefore, the sampling plan should include installation of a subslab sampling point paired with an indoor air sampler (Summa canister), with the indoor air sampler placed at breathing zone height above the subslab sample point. The subslab/breathing zone sample pairs should be placed in the northeast corner of the building, where the suspected NAPL plume exists, as well as in southwest the corner of the building as a point of comparison to evaluate the magnitude and expanse of indoor air contamination, should any be detected.
- Request No Further Action for investigation of soil contamination in association with USTs 12 and 15.

(intentionally blank)

7.0 REFERENCES

Alaska Climate Data Center. 2022. Temperature, rainfall, and snowfall normal. https://akclimate.org/data/. Accessed January 2023.

ADEC (Alaska Department of Environmental Conservation). 1993 (April). *Phase 1 Site Assessment and Phase 2 Site Assessment*. MarkAir Facilities. FAI. Technical Memorandum.

ADEC. 2017a (March). *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites*. Division of Spill Prevention and Response, Contaminated Sites Program.

ADEC. 2017b (November). *Vapor Intrusion Guidance for Contaminated Sites*. Division of Spill Prevention and Response, Contaminated Sites Program.

ADEC. 2018 (February). *Procedures for Calculating Cumulative Risk*. Contaminated Sites Program.

ADEC. 2019a (March). *FIA – MarkAir – Main Facility Hangar – Request for Work Plan*. Memorandum.

ADEC. 2019b (June). *FIA – MarkAir – Main Facility Hangar – Response to Request for Work Plan*. Memorandum.

ADEC. 2021 (November). *Oil and Other Hazardous Substances Pollution Control*. 18 AAC 75. Amended through November 2021.

ADEC. 2022a (January). *Field Sampling Guidance*. Final. Division of Spill Prevention and Response, Contaminated Sites Program.

ADEC. 2022b. *ADEC Contaminated Site Program – MarkAir- FIA Main Facility (Hangar).* https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/22871. Accessed May 2022.

ADF&G (Alaska Department of Fish & Game). 2023 (January). Wildlife Viewing – Interior Alaska. http://www.adfg.alaska.gov/index.cfm?adfg=viewinglocations.interior.

DOT&PF (Alaska Department of Transportation & Public Facilities). 1993. *Phase II Environmental Site Assessment, MarkAir Fairbanks Facilities, Volume I*. Prepared by Environmental Management, Inc.

DOT&PF. 2005a (April). *Site Characterization Report, Fairbanks International Airport, Former MarkAir Facilities, Fairbanks, Alaska*. 004.0184.00001 Task 3a. Prepared by SLR Alaska.

DOT&PF. 2005b (December). *Former Mark Air Facilities 2005 Ground Water Monitoring Report.* Technical memorandum. Prepared by SLR Alaska.

DOT&PF. 2006 (November). Groundwater Monitoring Sample Results, Former MarkAir Facility, Fairbanks International Airport, Alaska. Technical memorandum. Prepared by Shannon & Wilson, Inc.

DOT&PF. 2019 (May). *FIA – MarkAir – Main Facility Hangar – Request for Work Plan Response*. Memorandum.

DOT&PF. 2022a (January). *2020 MarkAir Warehouse Groundwater Monitoring with Enhanced Monitored Natural Attenuation Report.* Prepared by Jacobs Engineering Inc.

DOT&PF. 2022b (March). *2021 Drainage Pond Groundwater Monitoring Report*. Prepared by Jacobs Engineering Inc.

DOT&PF. 2022c (April). *2021 Hydrant Fuel System Groundwater Monitoring Report.* Prepared by Jacobs Engineering Inc.

EPA (Environmental Protection Agency). 2000 (January). Chloroform Hazard Summary. https://www.epa.gov/sites/default/files/2016-09/documents/chloroform.pdf.

EPA. 2016 (April). *TCLP Questions*. Accessed 2 February 2023. https://archive.epa.gov/epawaste/hazard/web/html/faq_tclp.html.

Péwé, T.L. 1982. *Geologic hazards of the Fairbanks area: Alaska Division of Geological & Geophysical Surveys Special Report 15*. Alaska Division of Geological & Geophysical Surveys. https://doi.org/10.14509/2614.

U.S. Census Bureau. 2023 (February). QuickFacts: Fairbanks city, Alaska. https://www.census.gov/quickfacts/fact/dashboard/fairbankscityalaska/PST045221.

APPENDIX A
Site Figures

- Alaska Railroad
- MarkAir Hangar
- Historical Excavation
- Former Underground Storage Tanks
- Ft. Wainwright Installation Boundary

Imagery: ArcGIS Map Service
Server: https://gisportal.fnsb.us/image/services
Name: Imagery_2020_Pictometry_Fairbanks
Geospatial Features from Fairbanks North Star Borough GIS. Accessed 31 May 2022.
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1 inch = 2,000 feet

0 1,000 2,000 3,000 4,000

Feet

WGS 1984 UTM Zone 6N

N

DOT&PF FAI MARKAIR HANGAR
SITE OVERVIEW & PROPOSED WELL LOCATIONS
2022 SITE CHARACTERIZATION WORK PLAN

FAIRBANKS INTERNATIONAL AIRPORT, FAIRBANKS, ALASKA

JACOBS	DATE: 07 FEB 2023	PROJECT MANAGER: G. WADE	FIGURE NO: A-1

\\dc1vs01\GISProj\AVAKDOT\MapFiles\Fairbanks_MarkAirHangar_SCI\Fig\A1_FAI_MarksAirHangar_LocVic.mxd beatyc]

- Groundwater Flow Direction
- Major GW Contour
- Minor GW Contour
- Alaska Railroad
- MarkAir Hangar
- Former Underground Storage Tanks
- Historical Excavation
- Building

Imagery: ArcGIS Map Service
Server: https://gisportal.fnsb.us/image/services
Name: Imagery_2020_Pictometry_Fairbanks
Geospatial Features from Fairbanks North Star Borough GIS. Accessed 31 May 2022.
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1 inch = 200 feet

0 100 200 300 400

Feet

WGS 1984 UTM Zone 6N

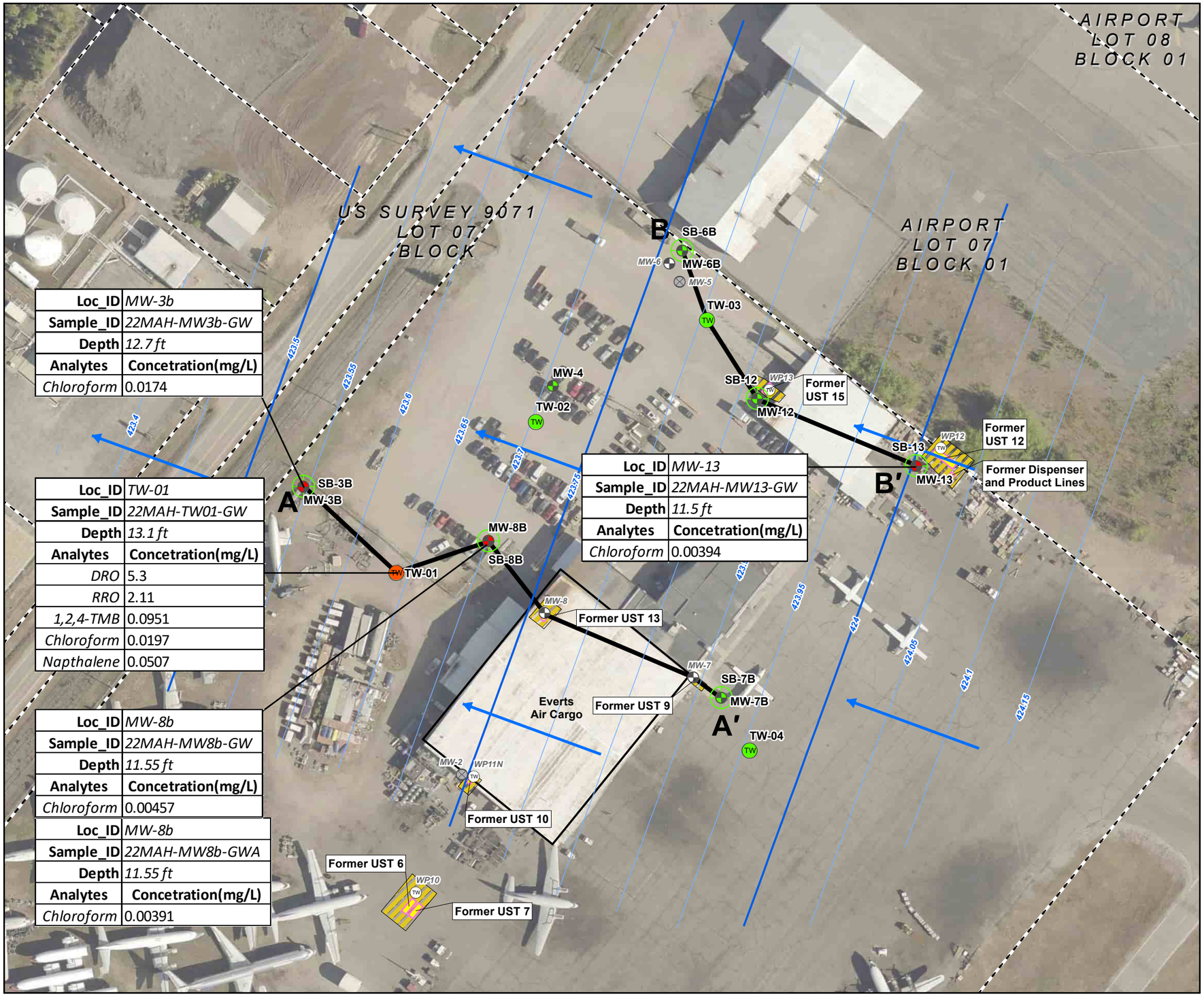
N

DOT&PF FAI MARKAIR HANGAR
GROUNDWATER ELEVATIONS & SITE LOCATION
2023 SITE CHARACTERIZATION REPORT

FAIRBANKS INTERNATIONAL AIRPORT, FAIRBANKS, ALASKA

JACOBS	DATE: 16 FEB 2023	PROJECT MANAGER: G. WADE	FIGURE NO: A-2

\\dc1vs01\GISProj\AKDOT\MapFiles\Fairbanks_MarkAirHangar_SC\Fig\A2_FAI_MarksAirHangar_GWElevations_SiteLoc.mxd beatyj



Loc_ID	*MW-3b*
Sample_ID	*22MAH-MW3b-GW*
Depth	*12.7 ft*
Analytes	**Concetration(mg/L)**
Chloroform	0.0174

Loc_ID	*TW-01*
Sample_ID	*22MAH-TW01-GW*
Depth	*13.1 ft*
Analytes	**Concetration(mg/L)**
DRO	5.3
RRO	2.11
1,2,4-TMB	0.0951
Chloroform	0.0197
Napthalene	0.0507

Loc_ID	*MW-13*
Sample_ID	*22MAH-MW13-GW*
Depth	*11.5 ft*
Analytes	**Concetration(mg/L)**
Chloroform	0.00394

Loc_ID	*MW-8b*
Sample_ID	*22MAH-MW8b-GW*
Depth	*11.55 ft*
Analytes	**Concetration(mg/L)**
Chloroform	0.00457

Loc_ID	*MW-8b*
Sample_ID	*22MAH-MW8b-GWA*
Depth	*11.55 ft*
Analytes	**Concetration(mg/L)**
Chloroform	0.00391

- Temporary Well, Exceedance
- Temporary Well, No Exceedance
- Groundwater Monitoring Well, Exceedance
- Groundwater Monitoring Well, No Exceedance
- Soil Boring, No Exceedance
- Historic Well Point
- Historic Monitoring Well
- Historic Monitoring Well (Decomissioned)
- Groundwater Flow Direction
- Major GW Contour
- Minor GW Contour
- Cross Section Line
- MarkAir Hangar
- Former Underground Storage Tanks
- Historical Excavation
- Parcel Boundary

Imagery: ArcGIS Map Service
Server: https://gisportal.fnsb.us/image/services
Name: Imagery_2020_Pictometry_Fairbanks
Geospatial Features from Fairbanks North Star Borough GIS. Accessed 31 May 2022.
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

1 inch = 100 feet

0 25 50 75 100 125 150 175 200

Feet

WGS 1984 UTM Zone 6N

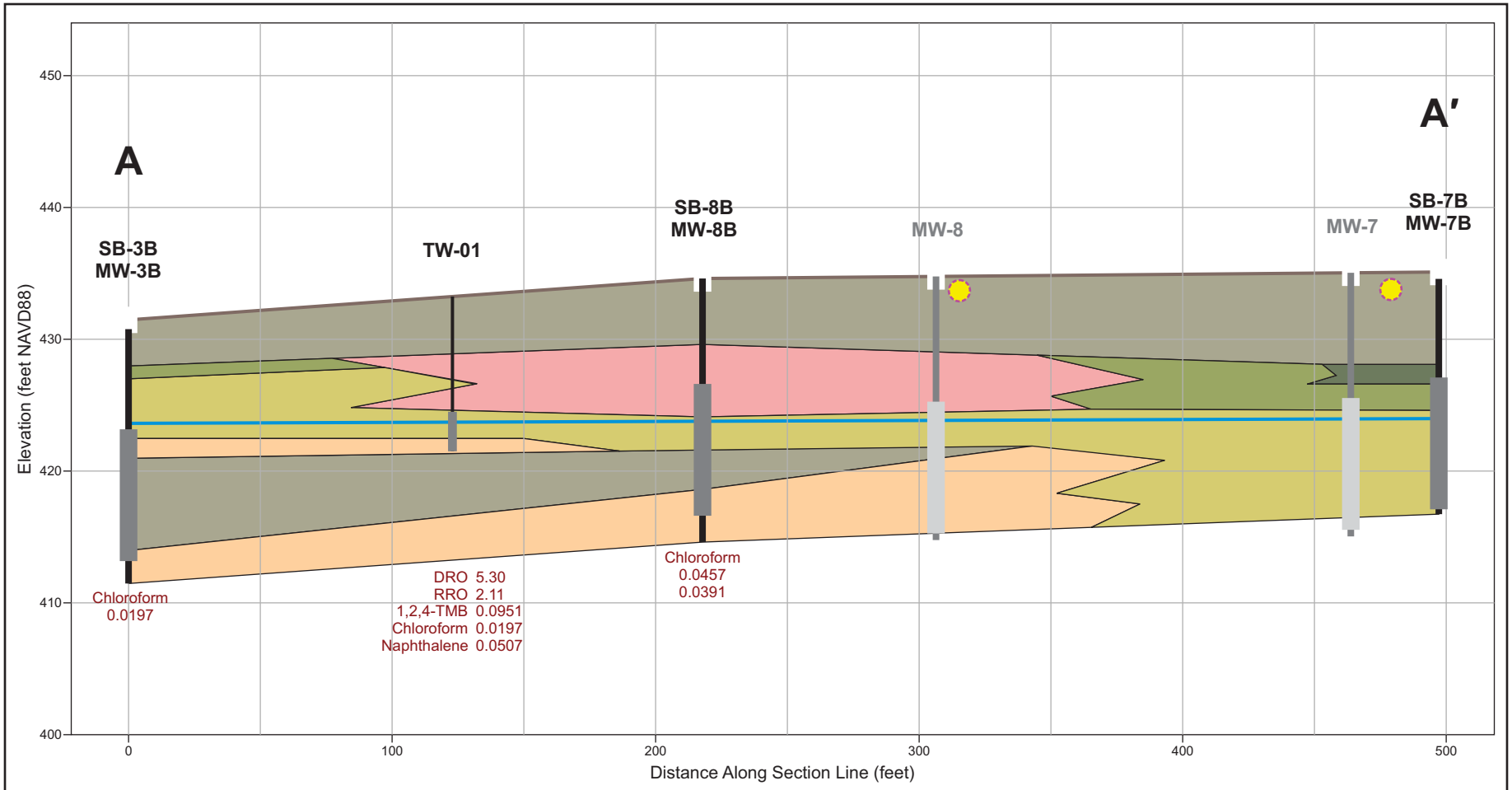
N

DOT&PF FAI MARKAIR HANGAR
SAMPLE RESULTS AND SITE SUMMARY
2023 SITE CHARACTERIZATION REPORT

FAIRBANKS INTERNATIONAL AIRPORT, FAIRBANKS, ALASKA

JACOBS	DATE: 22 FEB 2023	PROJECT MANAGER: G. WADE	FIGURE NO: A-3

\\dc1vs01\GISProj\AVAKDOT\MapFiles\Fairbanks_MarkAirHangar_SCI\Fig43_FAI_MarkAirHangar_SamplesPlumes.mxd beatyc



OL: organic soil

ML: silt

SM: sand with silt

GW-GM, GP-GM: well- to poorly graded gravel with silt

SP: poorly graded sand

GP: poorly graded gravel

Former underground storage tank

Water table on 2022-11-09

Soil boring and monitoring well showing screened interval (Historical decommissioned wells grayed)

Temporary well showing approximate screened interval

Chloroform 0.0197 — Groundwater exceedance (mg/L) in late August 2022

Horizontal Scale (1 inch = 60 feet): 0, 30, 60, 90

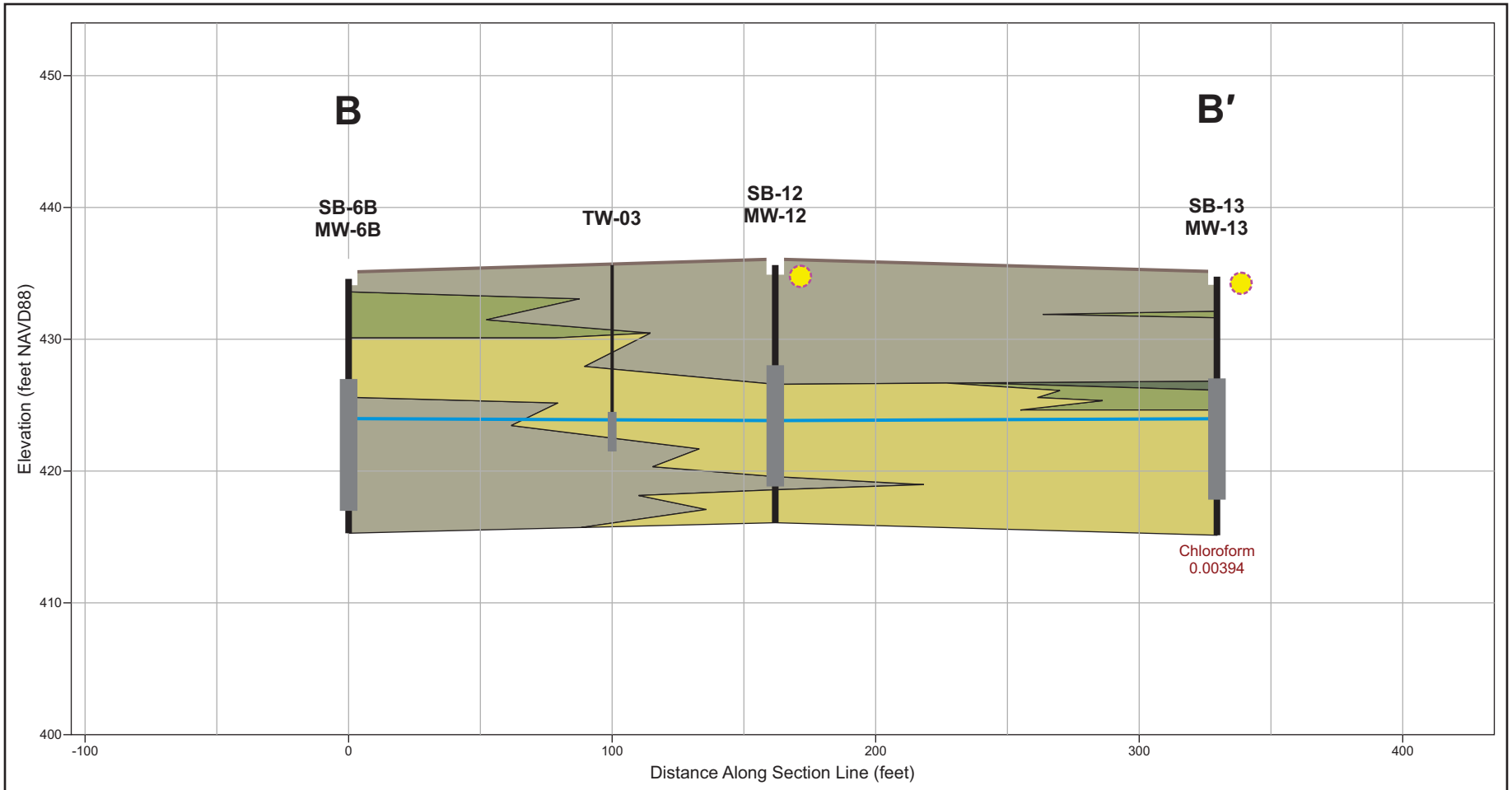
Vertical Scale (1 inch = 12 feet): 0, 3, 6, 9

Vertical Exaggeration = 10x

DOT&PF FAI MARKAIR HANGER
CROSS SECTION A-A′
2023 SITE CHARACTERIZATION REPORT
FAIRBANKS INTERNATIONAL AIRPORT, FAIRBANKS, ALASKA

JACOBS	DATE: 14 FEB 2023	PROJECT MANAGER: G. WADE	FIGURE NO: A-4

\\usanc2-fil001\Commercial\AK DOT\FAI\TO09-MarkAir Hanger SC 2022\COMMON\Working Reports\Cross Sections\FigA4_XsecA.cdr DWard



OL: organic soil

ML: silt

SM, SP-SM: sand with silt

GP-GM, GM: well- to poorly graded gravel with silt

Former underground storage tank

Water table on 2022-11-09

Soil boring and monitoring well showing screened interval

Temporary well showing approximate screened interval

Chloroform 0.0197 Groundwater exceedance (mg/L) in late August 2022

0 30 60 90

Horizontal Scale (1 inch = 60 feet)

Vertical Scale (1 inch = 12 feet)

0 3 6 9

Vertical Exaggeration = 10x

DOT&PF FAI MARKAIR HANGAR
CROSS SECTION B-B′
2023 SITE CHARACTERIZATION REPORT
FAIRBANKS INTERNATIONAL AIRPORT, FAIRBANKS, ALASKA

JACOBS	DATE: 14 FEB 2023	PROJECT MANAGER: G. WADE	FIGURE NO: A-5

\\usanc2-fil001\Commercial\AK DOT\FAI\TO09-MarkAir Hanger SC 2022\COMMON\Working Reports\Cross Sections\FigA5_XsecB.cdr DWard

APPENDIX B
Photograph Log

PHOTOGRAPH LOG
TABLE OF CONTENTS

Photo Number **Page**

(intentionally blank)

Photo No. 1 – SB-6b core from 0–5 feet (top)

Photo No. 2 – SB-6b core from 5–10 feet (top)

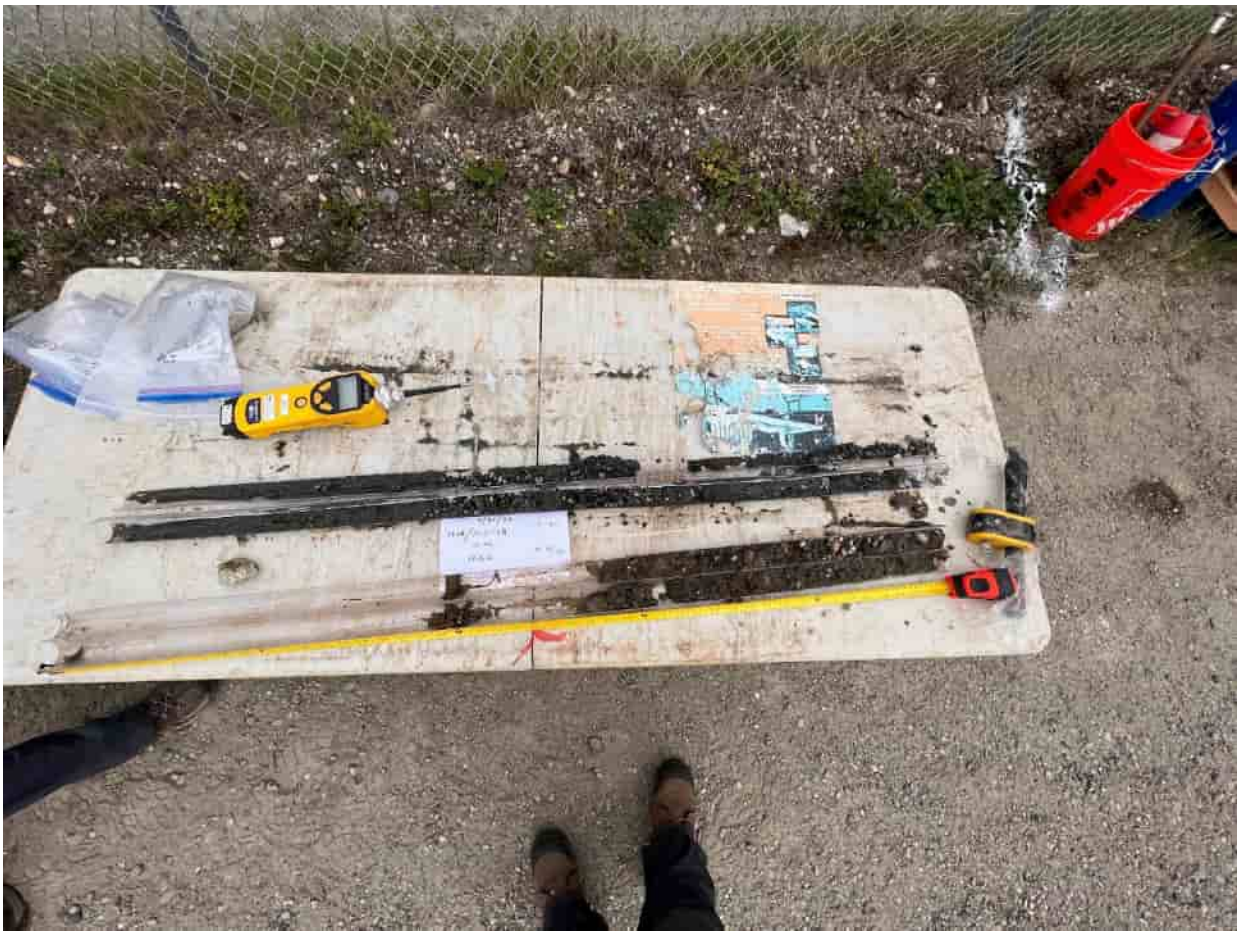


Photo No. 3 – SB-6b core from 10–15 feet (bottom core) and 15–20 feet (top core)

Photo No. 4 – Finished install of MW-6b

Photo No. 5 – SB-13 core from 0–5 feet

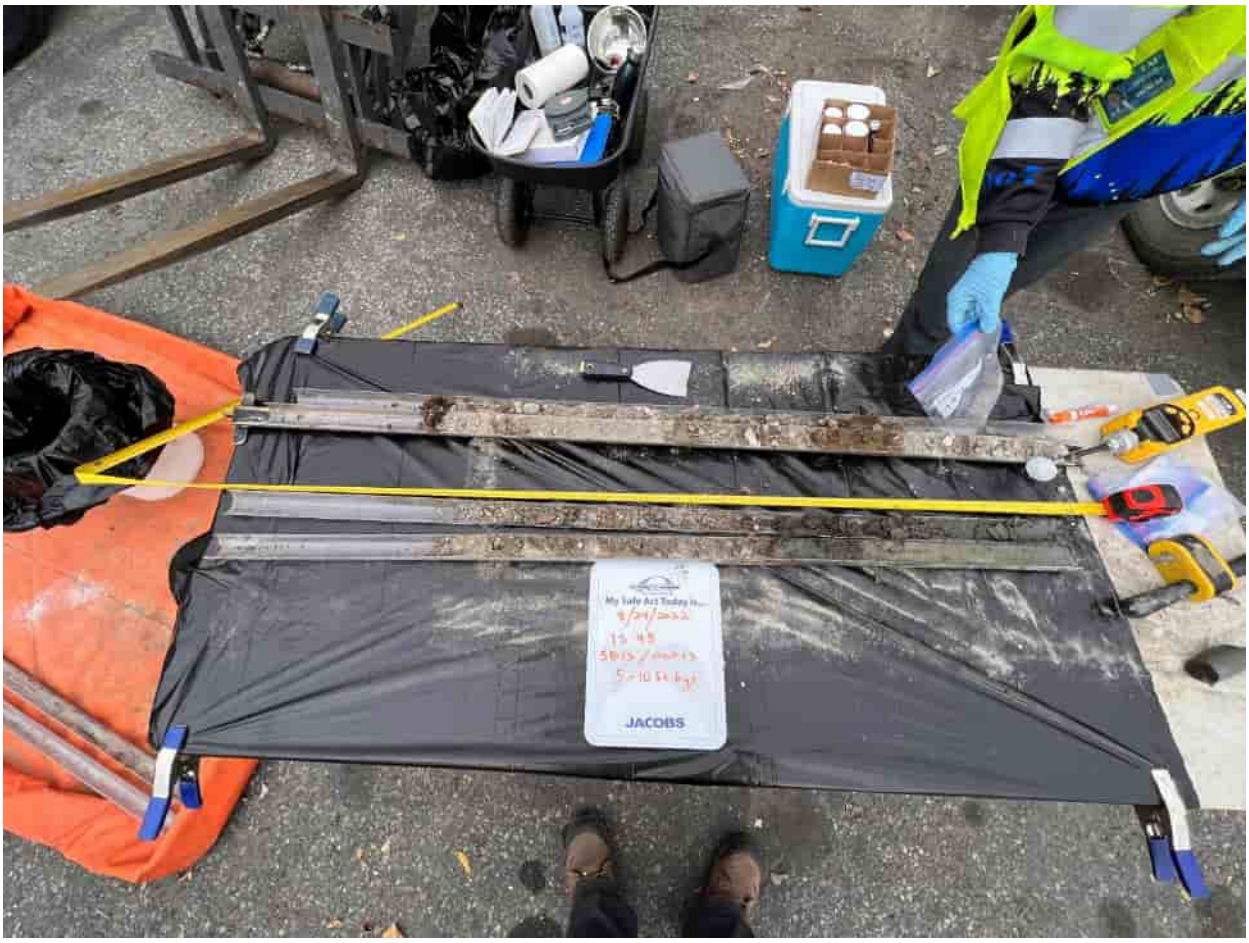


Photo No. 6 – SB-13 core from 5–10 feet

Photo No. 7 – SB-13 core from 10–15 feet

Photo No. 8 – SB-13 core from 15–20 feet

Photo No. 9 – Drill rig setup at TW-04

Photo No. 10 – Drill rig beginning the advancement of SB-7b

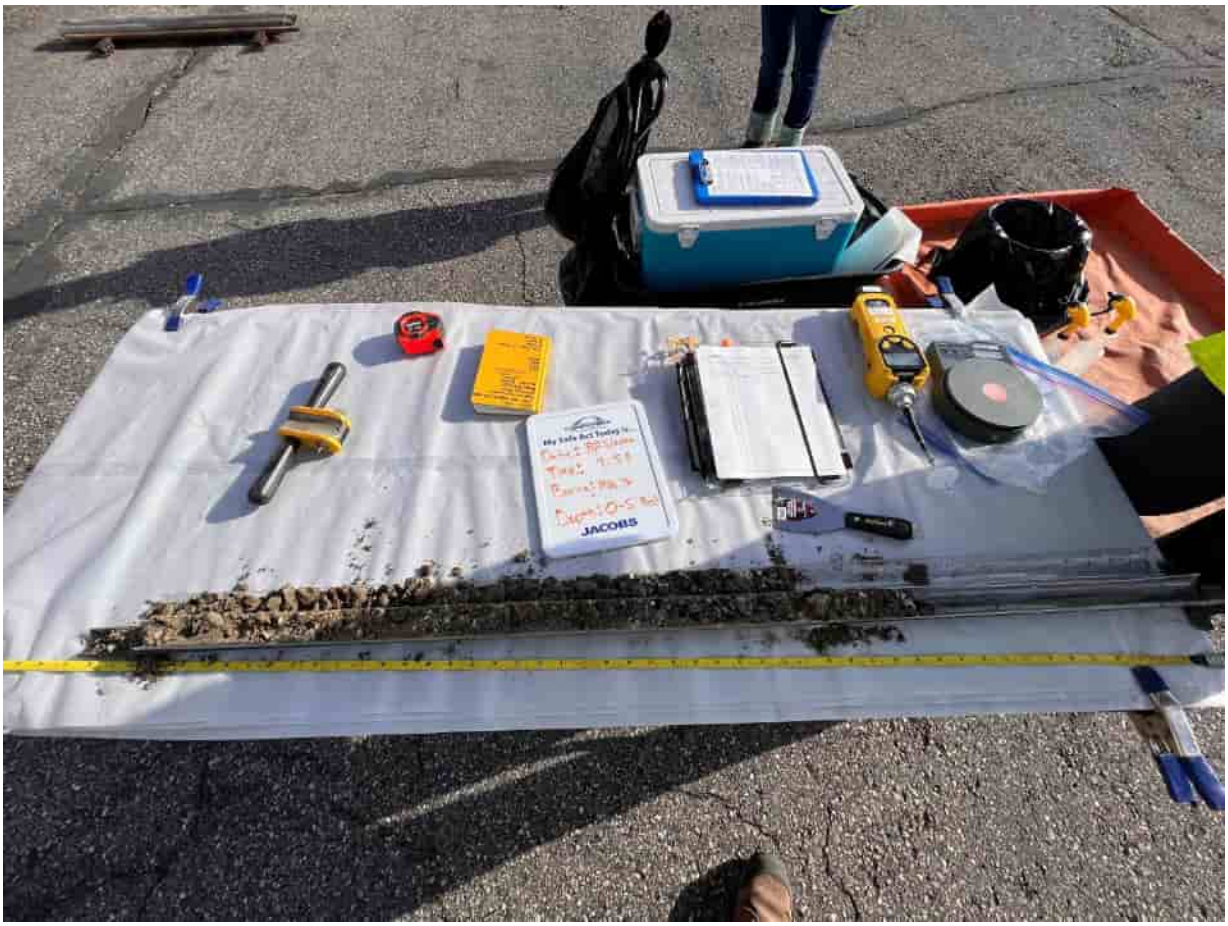


Photo No. 11 – SB-7b core from 0–5 feet

Photo No. 12 – SB-7b core from 5–10 feet

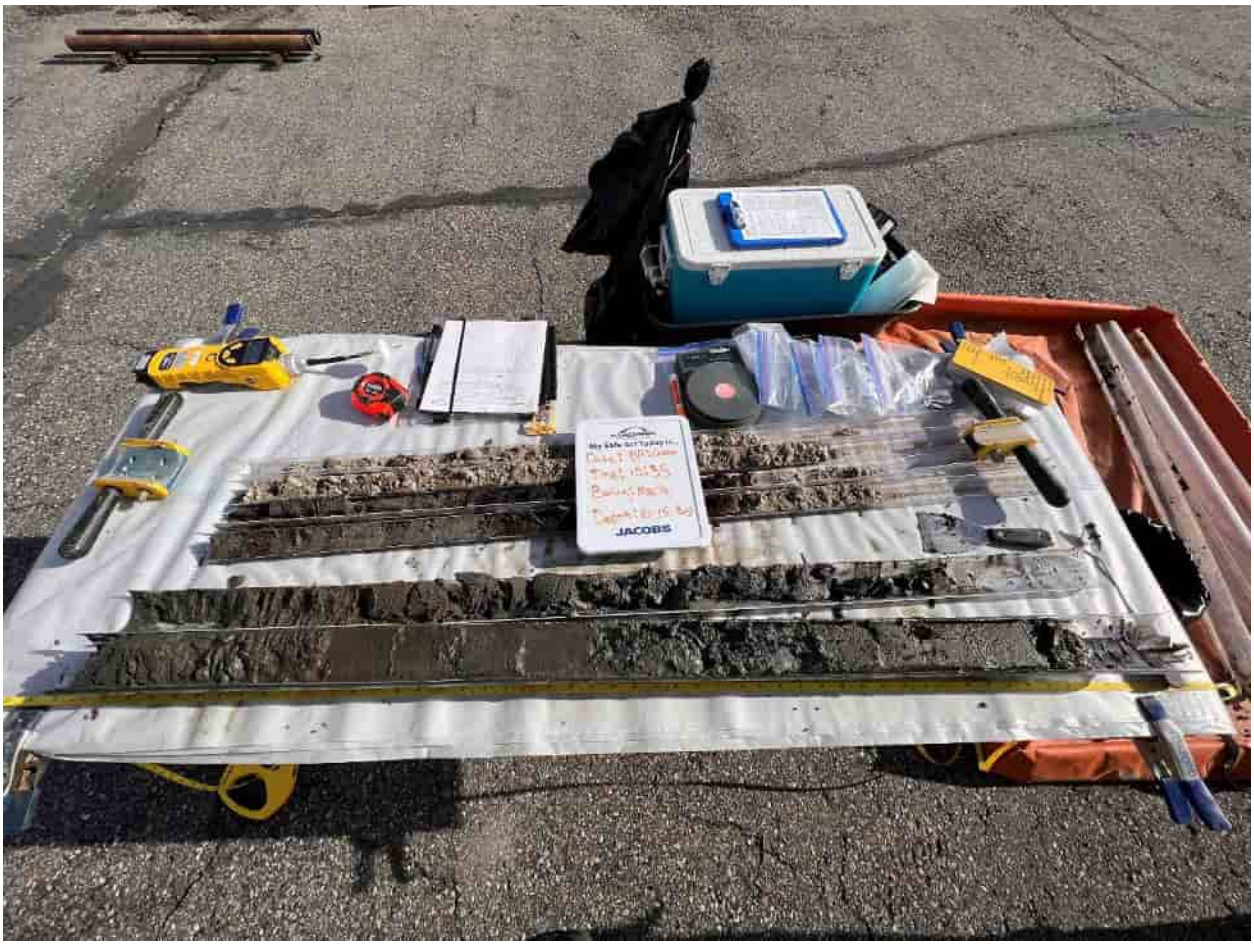


Photo No. 13 – SB-7b core from 10–15 feet

Photo No. 14 – SB-7b core from 15–18 feet

Photo No. 15 – Drill rig setup at SB-13

Photo No. 16 – Drill rig setup at TW-03

Photo No. 17 – Installation of TW-03

Photo No. 18 – SB-12 core from 0–5 feet

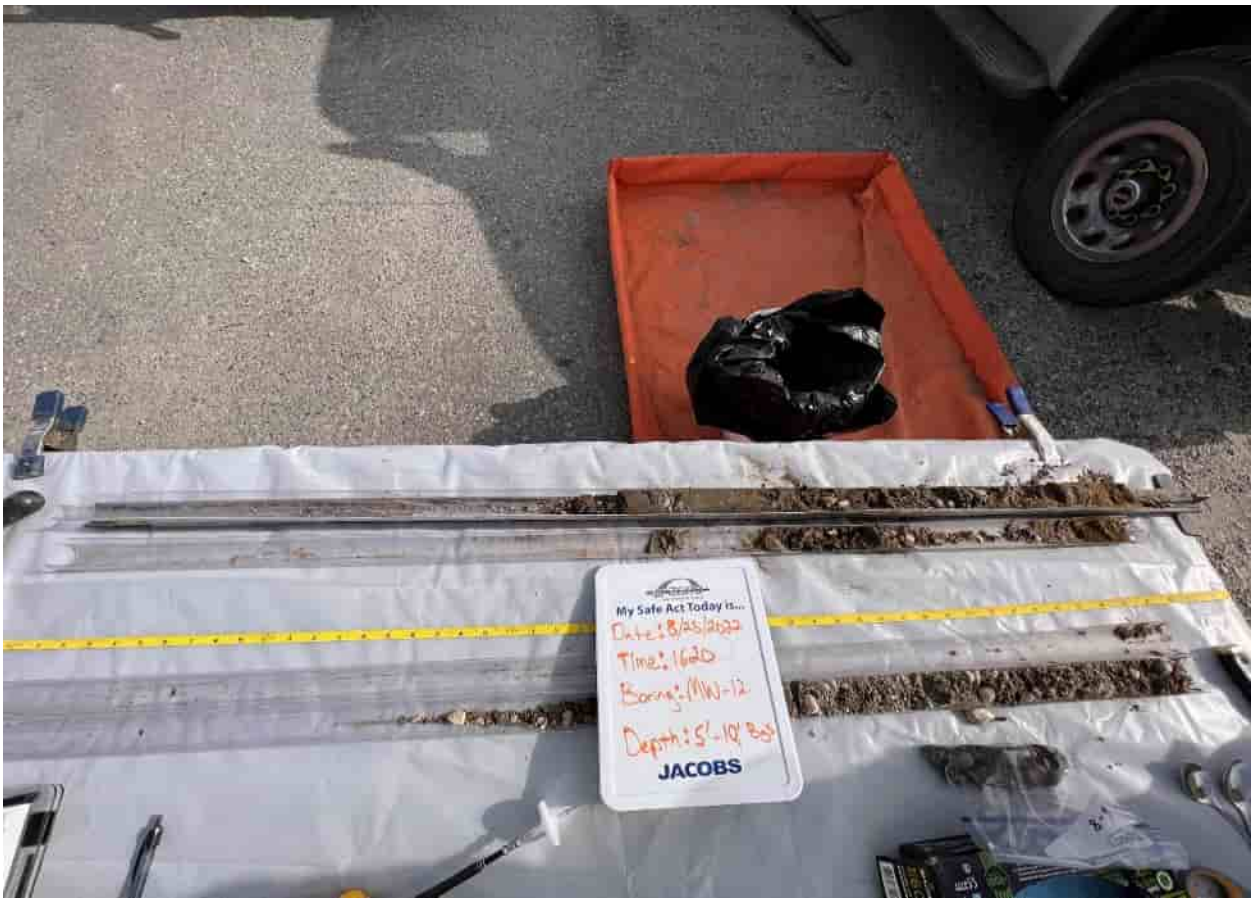


Photo No. 19 – SB-12 core from 5–10 feet

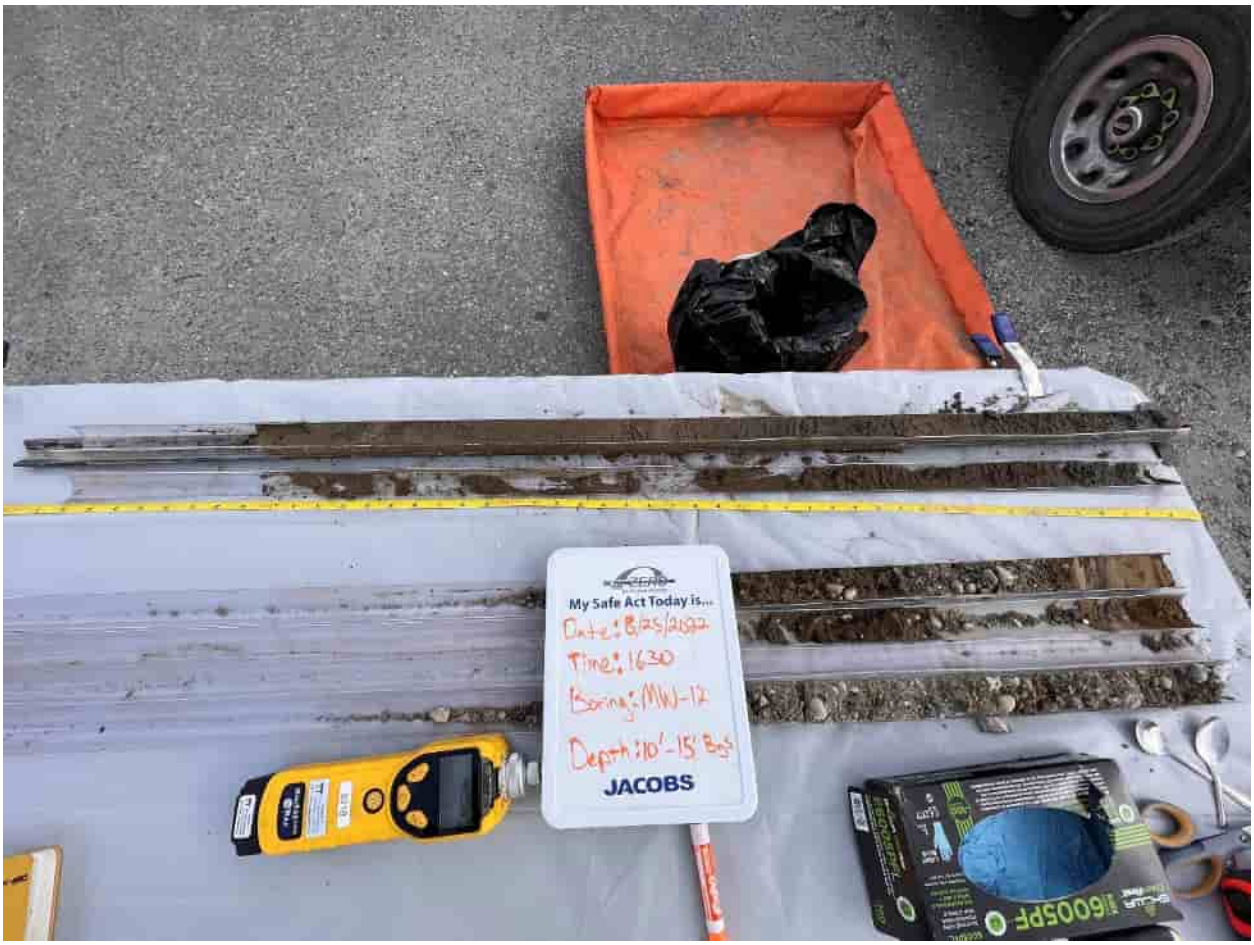


Photo No. 20 – SB-12 core from 10–15 feet

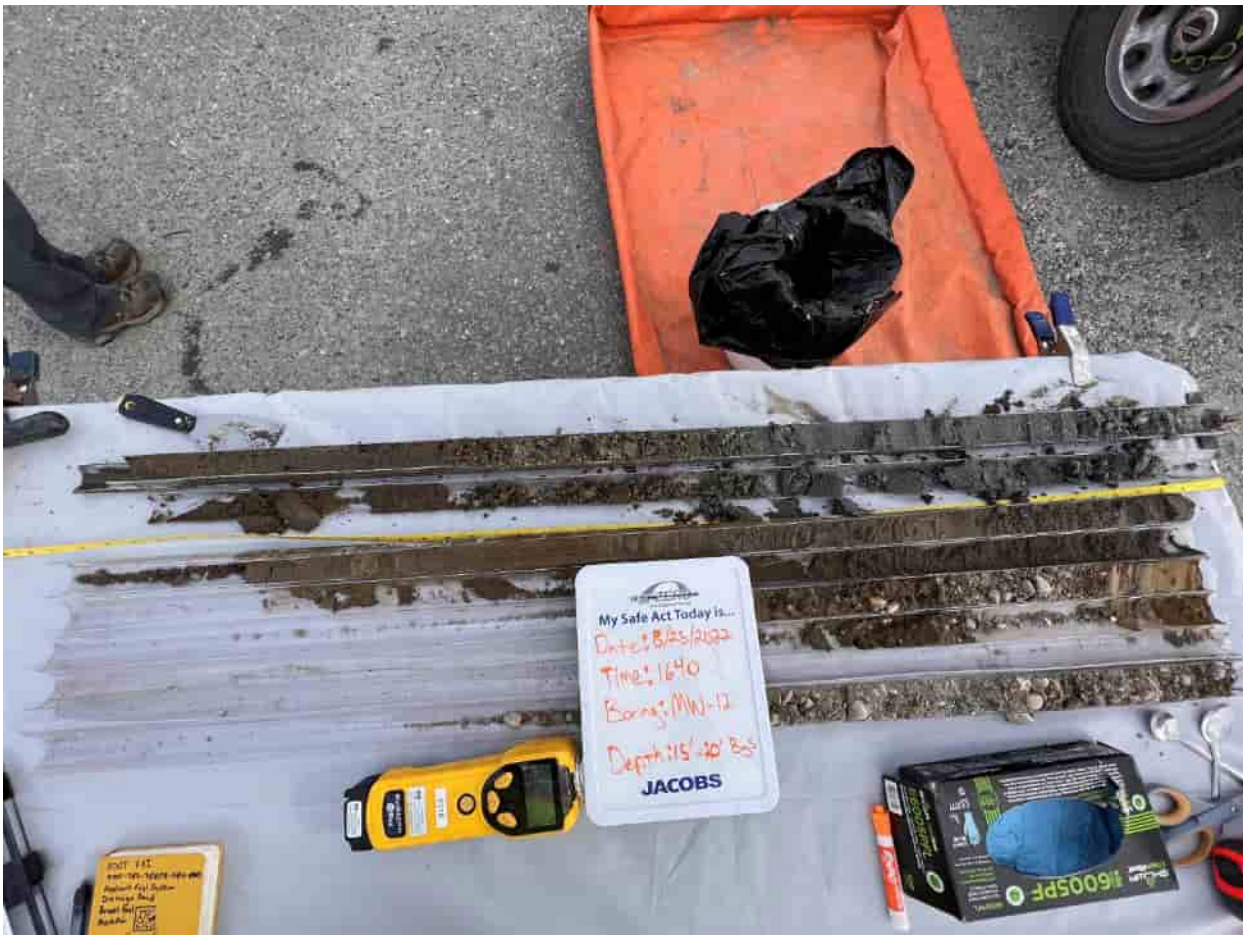


Photo No. 21 – SB-12 core from 15–20 feet

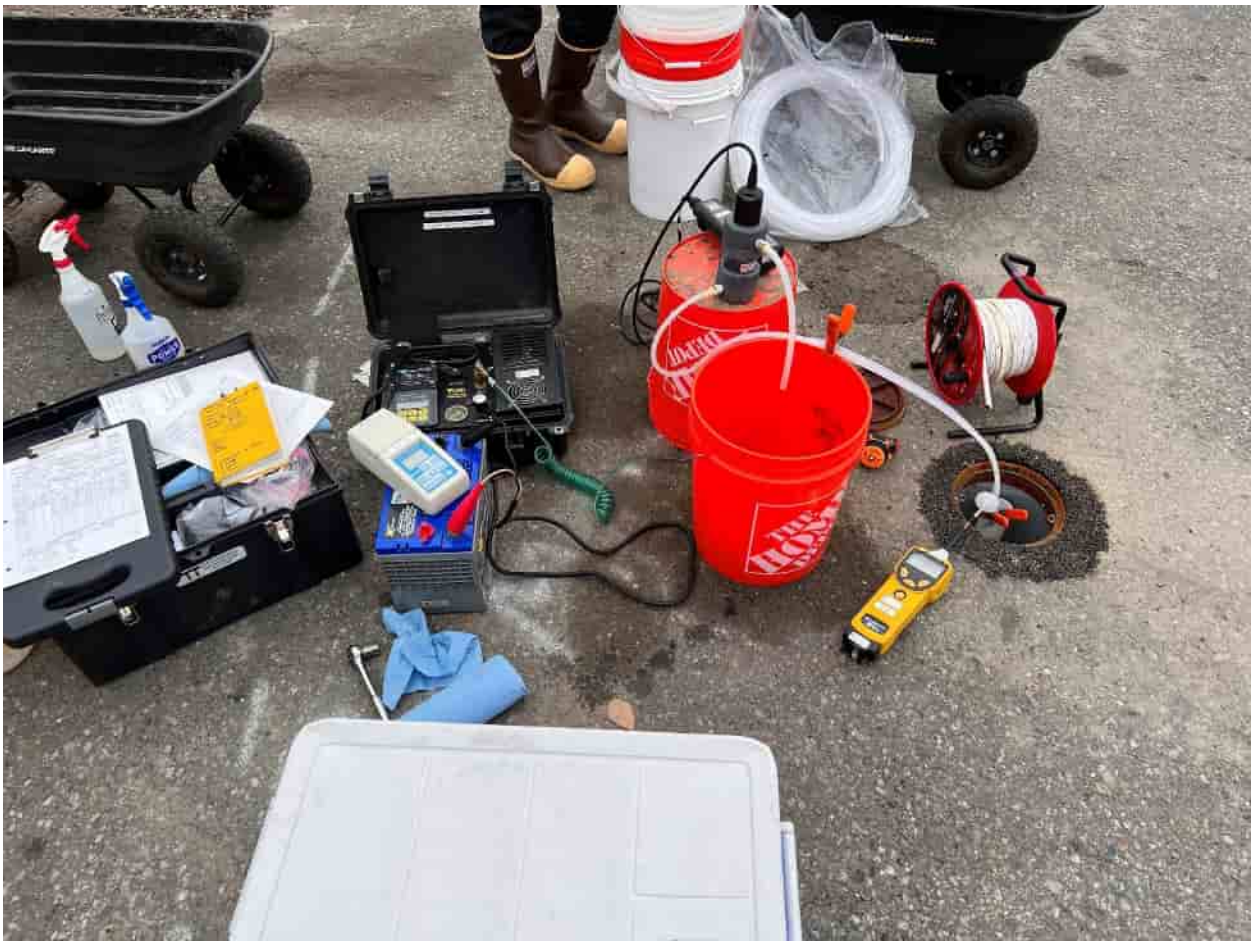


Photo No. 22 – Typical groundwater sampling setup at MW-13

APPENDIX C
Data Quality Assessment
and
Lab Reports
(appended separately)

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.1 Sample Summary

Site	CoC Number	Laboratory	Laboratory SDG	Sample ID	Location ID	Collection Date	Collection Time	Sampler	Quantity	Container Type	Container Volume	Preservation	Matrix	Analytical Method	QC Type	TAT (days)	Notes
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB6b-SO9.5-10	SB6b	8/24/2022	1155	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB6b-SO9.5-10	SB6b	8/24/2022	1155	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB6b-SO2-4	SB6b	8/24/2022	1218	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB6b-SO2-4	SB6b	8/24/2022	1218	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB13-SO10-10.5	SB16	8/24/2022	1600	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB13-SO10-10.5	SB16	8/24/2022	1600	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB13-SO8-10	SB16	8/24/2022	1615	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB13-SO8-10	SB16	8/24/2022	1615	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO10-10.5	SB7b	8/25/2022	1048	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO10-10.5	SB7b	8/25/2022	1048	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO10-10.5A	SB7b	8/25/2022	1048	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM	Dup	14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO10-10.5A	SB7b	8/25/2022	1048	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020	Dup	14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO6-8	SB7b	8/25/2022	1115	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB7b-SO6-8	SB7b	8/25/2022	1115	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-MW4-GW	MW4	8/25/2022	0950	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-MW4-GW	MW4	8/25/2022	0950	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-MW4-GW	MW4	8/25/2022	0950	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-MW4-GW	MW4	8/25/2022	0950	KS,AJ,LA,KJ,LL	2	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW04-GW	TW04	8/25/2022	1145	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW04-GW	TW04	8/25/2022	1145	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW04-GW	TW04	8/25/2022	1145	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW04-GW	TW04	8/25/2022	1145	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB12-SO10.5-11	SB12	8/25/2022	1655	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB12-SO10.5-11	SB12	8/25/2022	1655	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB12-SO2-4	SB12	8/25/2022	1655	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB12-SO2-4	SB12	8/25/2022	1655	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW03-GW	TW03	8/25/2022	1640	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW03-GW	TW03	8/25/2022	1640	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW03-GW	TW03	8/25/2022	1640	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW03-GW	TW03	8/25/2022	1640	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW02-GW	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GW	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GW	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GW	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW02-GWA	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM	Dup	14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GWA	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103	Dup	14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GWA	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM	Dup	14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW02-GWA	TW02	8/26/2022	0930	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A	Dup	14 Day	Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB3b-SO9.5-10	SB3b	8/26/2022	1515	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB3b-SO9.5-10	SB3b	8/26/2022	1515	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB3b-SO2-4	SB3b	8/26/2022	1530	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB3b-SO2-4	SB3b	8/26/2022	1530	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW01-GW	TW01	8/26/2022	1610	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW01-GW	TW01	8/26/2022	1610	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW01-GW	TW01	8/26/2022	1610	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW01-GW	TW01	8/26/2022	1610	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO6-8	SB8b	8/27/2022	0900	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO6-8	SB8b	8/27/2022	0900	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO10-10.5	SB8b	8/27/2022	0915	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO10-10.5	SB8b	8/27/2022	0915	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO10-10.5A	SB8b	8/27/2022	0915	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM	Dup	14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-SB8b-SO10-10.5A	SB8b	8/27/2022	0915	KS,AJ,LA,KJ,LL	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020	Dup	14 Day	DRO/RRO, PAH, Lead
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TW6b-GW	TW6b	8/27/2022	1530	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW6b-GW	TW6b	8/27/2022	1530	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW6b-GW	TW6b	8/27/2022	1530	KS,AJ,LA,KJ,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH02	SGS	1225222	22MAH-TW6b-GW	TW6b	8/27/2022	1530	KS,AJ,LA,KJ,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH03	SGS	1225240	22MAH-TB01S	TB01S	8/24/2022	0800	KS,AJ,LA,KJ,LL	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM	TB	14 Day	GRO, VOC, EDB
ADOT MAH	22ADOT-MAH02	SGS	1225223	22MAH-TB01W	TB01W	8/25/2022	0800	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM	TB	14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW13-GW	MW13	8/30/2022	1105	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW13-GW	MW13	8/30/2022	1105	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW13-GW	MW13	8/30/2022	1105	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW13-GW	MW13	8/30/2022	1105	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW7b-GW	MW7b	8/30/2022	1245	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW7b-GW	MW7b	8/30/2022	1245	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW7b-GW	MW7b	8/30/2022	1245	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW7b-GW	MW7b	8/30/2022	1245	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GW	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GW	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GW	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GW	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GWA	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM	Dup	14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GWA	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103	Dup	14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GWA	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM	Dup	14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW8b-GWA	MW8b	8/31/2022	1014	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A	Dup	14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW12-GW	MW12	8/31/2022	1200	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.1 Sample Summary

Site	CoC Number	Laboratory	Laboratory SDG	Sample ID	Location ID	Collection Date	Collection Time	Sampler	Quantity	Container Type	Container Volume	Preservation	Matrix	Analytical Method	QC Type	TAT (days)	Notes
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW12-GW	MW12	8/31/2022	1200	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW12-GW	MW12	8/31/2022	1200	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW12-GW	MW12	8/31/2022	1200	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW3b-GW	MW3b	8/31/2022	1437	KS,AJ,LA,MC,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW3b-GW	MW3b	8/31/2022	1437	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C; HCl	GW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW3b-GW	MW3b	8/31/2022	1437	KS,AJ,LA,MC,LL	2	GA	250mL	<6°C	GW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-MW3b-GW	MW3b	8/31/2022	1437	KS,AJ,LA,MC,LL	1	Poly	125mL	HNO3	GW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH04	SGS	1225314	22MAH-TB02W	TB02W	8/30/2022	0800	KS,AJ,LA,KJ,LL	9	VOA	40mL	<6°C; HCl	GW	AK101, SW8260, SW8260 SIM	TB	14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR01-WW	DR01	10/13/2022	1040	AJ	9	VOA	40mL	<6°C; HCl	WW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR01-WW	DR01	10/13/2022	1040	AJ	2	GA	250mL	<6°C; HCl	WW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR01-WW	DR01	10/13/2022	1040	AJ	2	GA	250mL	<6°C	WW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR01-WW	DR01	10/13/2022	1040	AJ	1	HDPE	125mL	HNO3	WW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR01-WW	DR01	10/13/2022	1040	AJ	2	Poly	125mL	<6ºC	WW	EPA 537.1		14 Day	PFAS
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR02-WW	DR02	10/13/2022	1150	AJ	9	VOA	40mL	<6°C; HCl	WW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR02-WW	DR02	10/13/2022	1150	AJ	2	GA	250mL	<6°C; HCl	WW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR02-WW	DR02	10/13/2022	1150	AJ	2	GA	250mL	<6°C	WW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR02-WW	DR02	10/13/2022	1150	AJ	1	HDPE	125mL	HNO3	WW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR02-WW	DR02	10/13/2022	1150	AJ	2	Poly	125mL	<6ºC	WW	EPA 537.1		14 Day	PFAS
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR03-WW	DR03	10/13/2022	1230	AJ	9	VOA	40mL	<6°C; HCl	WW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR03-WW	DR03	10/13/2022	1230	AJ	2	GA	250mL	<6°C; HCl	WW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR03-WW	DR03	10/13/2022	1230	AJ	2	GA	250mL	<6°C	WW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR03-WW	DR03	10/13/2022	1230	AJ	1	HDPE	125mL	HNO3	WW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR03-WW	DR03	10/13/2022	1230	AJ	2	Poly	125mL	<6ºC	WW	EPA 537.1		14 Day	PFAS
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR04-WW	DR04	10/13/2022	1300	AJ	9	VOA	40mL	<6°C; HCl	WW	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR04-WW	DR04	10/13/2022	1300	AJ	2	GA	250mL	<6°C; HCl	WW	AK102/103		14 Day	DRO/RRO
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR04-WW	DR04	10/13/2022	1300	AJ	2	GA	250mL	<6°C	WW	SW8270 SIM		14 Day	PAHs
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR04-WW	DR04	10/13/2022	1300	AJ	1	HDPE	125mL	HNO3	WW	SW6020A		14 Day	Lead
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-DR04-WW	DR04	10/13/2022	1300	AJ	2	Poly	125mL	<6ºC	WW	EPA 537.1		14 Day	PFAS
ADOT MAH	22ADOT-MAH05	SGS	1226337	22MAH-TB03W	TB03W	10/13/2022	0800	AJ	9	VOA	40mL	<6°C; HCl	WW	AK101, SW8260, SW8260 SIM	TB	14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH06	SGS	1226513	22MAH-DR-SO	SODR	10/20/2022	1555	KS	3	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM		14 Day	GRO, VOCs, EDB
ADOT MAH	22ADOT-MAH06	SGS	1226513	22MAH-DR-SO	SODR	10/20/2022	1555	KS	1	GA	8 oz	< 6°C	SO	AK102/103, SW8270 SIM, SW6020		14 Day	DRO/RRO, PAHs, Lead
ADOT MAH	22ADOT-MAH06	SGS	1226513	22MAH-DR-SO	SODR	10/20/2022	1555	KS	1	Poly	4 oz	< 6ºC	SO	EPA 537.1		14 Day	PFAS
ADOT MAH	22ADOT-MAH06	SGS	1226513	Trip Blank	TB	10/20/2022	0	KS	1	GA	4 oz	< 6°C, MeOH	SO	AK101, SW8260, SW8260 SIM	TB	14 Day	GRO, VOCs, EDB

Notes:

°C = degrees Celsius
CoC = chain of custody
Dup = field duplicate
EDB = 1,2-dibromoethane
EPA = U.S. Environmental Protection Agency
GA = amber glass
GRO/DRO/RRO = gasoline-, diesel-, residual-range organics
GW = groundwater
HCl = hydrochloric acid
HDPE = high-density polyethylene
HNO3 = nitric acid
ID = identification
MeOH = methanol
mL = milliliter
PAH = polycyclic aromatic hydrocarbon
PFAS = per- and polyfluoroalkyl substances
QC = quality control
SDG = sample delivery group
SGS = SGS North America Inc., Anchorage, AK
SO = soil
TAT = turnaround time
TB = trip blank
VOA = volatile organic analysis
VOC = volatile organic compound
WW = wastewater

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

					Location ID:	MW3b	MW4	MW7b	MW8b
					Sample ID:	22MAH-MW3b-GW	22MAH-MW4-GW	22MAH-MW7b-GW	22MAH-MW8b-GW
					SDG:	1225314	1225222/223	1225314	1225314
					Lab Sample ID:	1225314006	1225222001/1225223001	1225314002	1225314003
					Sample Date/Time:	08/31/2022 14:37:00	08/25/2022 09:50:00	08/30/2022 12:45:00	08/31/2022 10:14:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**					
-	AK101	GRO	mg/L	2.2		ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5		0.3 [0.278] J	ND [0.294]	0.637 [0.319] J	0.918 [0.3] JD
-	AK103	RRO	mg/L	1.1		0.372 [0.232] J,B	0.24 [0.245] J	0.873 [0.266]	0.579 [0.25] B
7439-92-1	6020B	Lead	mg/L	0.015		0.0134 [0.0005]	0.000427 [0.0005] J	0.000894 [0.0005] J	0.000698 [0.0005] J,JD
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8		0.0005 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028		0.00032 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075		ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046		ND [0.0002]	ND [0.0002]	ND [0.0002]	0.00022 [0.0002] J
108-86-1	8260D	Bromobenzene	mg/L	0.062		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022		**0.0174 [0.0005]**	ND [0.0005]	0.00053 [0.0005] J	**0.00457 [0.0005]**
74-87-3	8260D	Chloromethane	mg/L	0.19		ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00043 [0.0005] J
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036		ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00032 [0.0005] J
98-82-8	8260D	Cumene	mg/L	0.45		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

				Location ID:	MW3b	MW4	MW7b	MW8b
				Sample ID:	22MAH-MW3b-GW	22MAH-MW4-GW	22MAH-MW7b-GW	22MAH-MW8b-GW
				SDG:	1225314	1225222/223	1225314	1225314
				Lab Sample ID:	1225314006	1225222001/1225223001	1225314002	1225314003
				Sample Date/Time:	08/31/2022 14:37:00	08/25/2022 09:50:00	08/30/2022 12:45:00	08/31/2022 10:14:00
				Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
				QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**				
74-95-3	8260D	Dibromomethane	mg/L	0.0083	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2	0.0187 [0.0005]	0.00207 [0.0005]	ND [0.0005]	0.0456 [0.0005]
-	8260D	Freon-113	mg/L	-	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-71-8	8260D	Freon-12	mg/L	0.2	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-	ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041	0.00033 [0.0005] J	ND [0.0005]	ND [0.0005]	0.0007 [0.0005] J
99-87-6	8260D	p-Cymene	mg/L	-	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1	ND [0.0005]	ND [0.0005]	0.000447 [0.0005] J	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19	ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011	0.0000274 [0.0000261] J,B	0.0000292 [0.000025] J,B	0.0000221 [0.0000266] J,B	0.0000208 [0.0000255] J,B,JD
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036	0.0000327 [0.0000261] J,B	0.0000443 [0.000025] J,B	0.0000329 [0.0000266] J,B	0.0000256 [0.0000255] J,B,JD
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
120-12-7	8270DSIM	Anthracene	mg/L	0.043	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025	ND [0.0000104]	ND [0.00001]	ND [0.0000107]	ND [0.0000102]
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
218-01-9	8270DSIM	Chrysene	mg/L	0.002	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025	ND [0.0000104]	ND [0.00001]	ND [0.0000107]	ND [0.0000102]
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26	0.0000182 [0.0000261] J	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
86-73-7	8270DSIM	Fluorene	mg/L	0.29	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019	ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

					Location ID:	MW3b	MW4	MW7b	MW8b
					Sample ID:	22MAH-MW3b-GW	22MAH-MW4-GW	22MAH-MW7b-GW	22MAH-MW8b-GW
					SDG:	1225314	1225222/223	1225314	1225314
					Lab Sample ID:	1225314006	1225222001/1225223001	1225314002	1225314003
					Sample Date/Time:	08/31/2022 14:37:00	08/25/2022 09:50:00	08/30/2022 12:45:00	08/31/2022 10:14:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**					
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017		0.000043 [0.000052] J	ND [0.00005]	ND [0.000053]	0.0000406 [0.000051] J
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17		0.0000632 [0.000052] J	0.0000478 [0.00005] J,B	0.0000466 [0.000053] J	ND [0.000051]
129-00-0	8270DSIM	Pyrene	mg/L	0.12		ND [0.0000261]	ND [0.000025]	ND [0.0000266]	ND [0.0000255]

Notes:

[1] 18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021).

Bold = Exceeds ADEC Groundwater Human Health Levels.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/L = milligram(s) per liter

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JD = The result was qualified because the relative percent difference (RPD) between the primary sample and the field duplicate sample exceeded 50 percent for soil or 30 percent for water and at least one of the results is greater than the LOD. If one result was a detect, and the other was a ND, then the LOD value was used in the RPD calculation for the ND result.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

					Location ID:	MW8b	MW12	MW13	TB01W	TB02W
					Sample ID:	22MAH-MW8b-GWA	22MAH-MW12-GW	22MAH-MW13-GW	22MAH-TB01W	22MAH-TB02W
					SDG:	1225314	1225314	1225314	1225223	1225314
					Lab Sample ID:	1225314004	1225314005	1225314001	1225223005	1225314007
					Sample Date/Time:	08/31/2022 10:14:00	08/31/2022 12:00:00	08/30/2022 11:05:00	08/25/2022 08:00:00	08/30/2022 08:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Field Duplicate	Primary Sample	Primary Sample	Trip Blank	Trip Blank
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**						
-	AK101	GRO	mg/L	2.2		ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5		0.627 [0.288] JD	0.538 [0.3] J	1.44 [0.341]	-	-
-	AK103	RRO	mg/L	1.1		0.537 [0.24] B	0.845 [0.25] B	0.899 [0.284]	-	-
7439-92-1	6020B	Lead	mg/L	0.015		0.000493 [0.0005] J,JD	0.000829 [0.0005] J	0.00143 [0.0005]	-	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075		ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056		ND [0.0005]	0.00058 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046		0.00019 [0.0002] J	ND [0.0002]	0.000286 [0.0002] J	ND [0.0002]	ND [0.0002]
108-86-1	8260D	Bromobenzene	mg/L	0.062		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022		**0.00391 [0.0005]**	0.00117 [0.0005]	**0.00394 [0.0005]**	ND [0.0005]	ND [0.0005]
74-87-3	8260D	Chloromethane	mg/L	0.19		ND [0.0005]	ND [0.0005]	0.0011 [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036		0.00038 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-82-8	8260D	Cumene	mg/L	0.45		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

					Location ID:	MW8b	MW12	MW13	TB01W	TB02W
					Sample ID:	22MAH-MW8b-GWA	22MAH-MW12-GW	22MAH-MW13-GW	22MAH-TB01W	22MAH-TB02W
					SDG:	1225314	1225314	1225314	1225223	1225314
					Lab Sample ID:	1225314004	1225314005	1225314001	1225223005	1225314007
					Sample Date/Time:	08/31/2022 10:14:00	08/31/2022 12:00:00	08/30/2022 11:05:00	08/25/2022 08:00:00	08/30/2022 08:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Field Duplicate	Primary Sample	Primary Sample	Trip Blank	Trip Blank
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**						
74-95-3	8260D	Dibromomethane	mg/L	0.0083		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075		ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2		0.0434 [0.0005]	0.0323 [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	Freon-113	mg/L	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-71-8	8260D	Freon-12	mg/L	0.2		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-		ND [0.001]	0.00102 [0.001] J	ND [0.001]	ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-		ND [0.0005]	0.00038 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041		0.00075 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
99-87-6	8260D	p-Cymene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1		ND [0.0005]	0.00034 [0.0005] J	ND [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019		ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19		ND [0.0015]	0.0014 [0.0015] J	ND [0.0015]	ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075		ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011		0.0000284 [0.0000261] J,B,JD	0.0000405 [0.0000261] J,B	0.0000224 [0.0000272] J,B	-	-
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036		0.0000393 [0.0000261] J,B,JD	0.0000652 [0.0000261] B	0.0000289 [0.0000272] J,B	-	-
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
120-12-7	8270DSIM	Anthracene	mg/L	0.043		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025		ND [0.0000104]	ND [0.0000104]	ND [0.0000109]	-	-
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
218-01-9	8270DSIM	Chrysene	mg/L	0.002		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025		ND [0.0000104]	ND [0.0000104]	ND [0.0000109]	-	-
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-
86-73-7	8270DSIM	Fluorene	mg/L	0.29		ND [0.0000261]	0.000025 [0.0000261] J	ND [0.0000272]	-	-
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019		ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.2 Groundwater Monitoring Well Results

				Location ID:	MW8b	MW12	MW13	TB01W	TB02W
				Sample ID:	22MAH-MW8b-GWA	22MAH-MW12-GW	22MAH-MW13-GW	22MAH-TB01W	22MAH-TB02W
				SDG:	1225314	1225314	1225314	1225223	1225314
				Lab Sample ID:	1225314004	1225314005	1225314001	1225223005	1225314007
				Sample Date/Time:	08/31/2022 10:14:00	08/31/2022 12:00:00	08/30/2022 11:05:00	08/25/2022 08:00:00	08/30/2022 08:00:00
				Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
				QA/QC:	Field Duplicate	Primary Sample	Primary Sample	Trip Blank	Trip Blank
CASNumber	**Method**	**Analyte**	**Units**	**GCL[1]**					
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017	0.0000451 [0.000052] J	0.000119 [0.000052]	ND [0.0000545]	-	-
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17	ND [0.000052]	ND [0.000052]	0.0000534 [0.0000545] J	-	-
129-00-0	8270DSIM	Pyrene	mg/L	0.12	ND [0.0000261]	ND [0.0000261]	ND [0.0000272]	-	-

Notes:

[1] 18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021).

Bold = Exceeds ADEC Groundwater Human Health Levels.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/L = milligram(s) per liter

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JD = The result was qualified because the relative percent difference (RPD) between the primary sample and the field duplicate sample exceeded 50 percent for soil or 30 percent for water and at least one of the results is greater than the LOD. If one result was a detect, and the other was a ND, then the LOD value was used in the RPD calculation for the ND result.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

					Location ID:	TW01	TW02	TW02	TW03	TW04
					Sample ID:	22MAH-TW01-GW	22MAH-TW02-GW	22MAH-TW02-GWA	22MAH-TW03-GW	22MAH-TW04-GW
					SDG:	1225222/223	1225222/223	1225222/223	1225222/223	1225222/223
					Lab Sample ID:	1225222005/1225223006	1225222006/1225223007	1225222007/1225223008	1225222003/1225223003	1225222002/1225223002
					Sample Date/Time:	08/26/2022 16:10:00	08/26/2022 09:30:00	08/26/2022 09:30:00	08/25/2022 16:40:00	08/25/2022 11:45:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Primary Sample	Field Duplicate	Primary Sample	Primary Sample
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**						
-	AK101	GRO	mg/L	2.2		0.539 [0.05] JS+	ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5		**5.3 [0.288]**	ND [0.283]	ND [0.288]	0.427 [0.294] J	0.73 [0.288]
-	AK103	RRO	mg/L	1.1		**2.11 [0.24]**	0.452 [0.236] J	0.413 [0.24] J	0.611 [0.245]	0.475 [0.24] J
7439-92-1	6020B	Lead	mg/L	0.015		0.00903 [0.0005]	0.000564 [0.0005] J	0.000559 [0.0005] J	0.000373 [0.0005] J	0.000567 [0.0005] J
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8		0.00445 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028		0.00327 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075		ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056		**0.0951 [0.0005] JS+**	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06		0.0291 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
108-86-1	8260D	Bromobenzene	mg/L	0.062		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022		**0.0197 [0.0005] JS+**	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-87-3	8260D	Chloromethane	mg/L	0.19		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-82-8	8260D	Cumene	mg/L	0.45		0.00567 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
74-95-3	8260D	Dibromomethane	mg/L	0.0083		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075		ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015		0.0101 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2		0.025 [0.0005] JS+	0.00388 [0.0005]	0.00413 [0.0005]	0.00278 [0.0005]	ND [0.0005]
-	8260D	Freon-113	mg/L	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

				Location ID:	TW01	TW02	TW02	TW03	TW04
				Sample ID:	22MAH-TW01-GW	22MAH-TW02-GW	22MAH-TW02-GWA	22MAH-TW03-GW	22MAH-TW04-GW
				SDG:	1225222/223	1225222/223	1225222/223	1225222/223	1225222/223
				Lab Sample ID:	1225222005/1225223006	1225222006/1225223007	1225222007/1225223008	1225222003/1225223003	1225222002/1225223002
				Sample Date/Time:	08/26/2022 16:10:00	08/26/2022 09:30:00	08/26/2022 09:30:00	08/25/2022 16:40:00	08/25/2022 11:45:00
				Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
				QA/QC:	Primary Sample	Primary Sample	Field Duplicate	Primary Sample	Primary Sample
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**					
75-71-8	8260D	Freon-12	mg/L	0.2	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-	0.0579 [0.001] JS+	ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017	**0.0507 [0.0005] JS+**	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-	0.118 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041	0.00134 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
99-87-6	8260D	p-Cymene	mg/L	-	0.00419 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66	0.00635 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2	0.00402 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028	0.000335 [0.0005] J,JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1	0.00163 [0.0005] JS+	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19	0.176 [0.0015] JS+	ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011	ND [0.0000232] JS-	0.0000189 [0.0000236] J,B	ND [0.0000236]	0.0000174 [0.0000245] J,B	0.0000187 [0.000024] J,B
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036	ND [0.0000232] JS-	0.0000213 [0.0000236] J,B	0.0000167 [0.0000236] J,B	0.0000249 [0.0000245] J,B	0.0000267 [0.000024] J,B
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
120-12-7	8270DSIM	Anthracene	mg/L	0.043	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025	ND [0.00000925] JS-	ND [0.00000945]	ND [0.00000945]	ND [0.0000098]	ND [0.0000096]
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
218-01-9	8270DSIM	Chrysene	mg/L	0.002	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025	ND [0.00000925] JS-	ND [0.00000945]	ND [0.00000945]	ND [0.0000098]	ND [0.0000096]
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	0.0000171 [0.0000245] J,B	ND [0.000024]
86-73-7	8270DSIM	Fluorene	mg/L	0.29	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019	ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	ND [0.0000245]	ND [0.000024]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

					Location ID:	TW01	TW02	TW02	TW03	TW04
					Sample ID:	22MAH-TW01-GW	22MAH-TW02-GW	22MAH-TW02-GWA	22MAH-TW03-GW	22MAH-TW04-GW
					SDG:	1225222/223	1225222/223	1225222/223	1225222/223	1225222/223
					Lab Sample ID:	1225222005/1225223006	1225222006/1225223007	1225222007/1225223008	1225222003/1225223003	1225222002/1225223002
					Sample Date/Time:	08/26/2022 16:10:00	08/26/2022 09:30:00	08/26/2022 09:30:00	08/25/2022 16:40:00	08/25/2022 11:45:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Primary Sample	Field Duplicate	Primary Sample	Primary Sample
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**						
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017		ND [0.0000463] JS-	ND [0.0000471]	ND [0.0000471]	ND [0.000049]	ND [0.0000481]
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17		ND [0.0000463] JS-	ND [0.0000471]	ND [0.0000471]	0.0000309 [0.000049] J,B	0.0000411 [0.0000481] J,B
129-00-0	8270DSIM	Pyrene	mg/L	0.12		ND [0.0000232] JS-	ND [0.0000236]	ND [0.0000236]	0.0000281 [0.0000245] J	ND [0.000024]

Notes:

[1]18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021)

Bold = Result exceeds ADEC Groundwater Human Health Levels.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/L = milligram(s) per liter

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

JS = The result was an estimated value biased high (+) or low (-) because at least one surrogate failed recovery criteria for the sample.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

				Location ID:	TW6B	TB01W
				Sample ID:	22MAH-TW6b-GW	22MAH-TB01W
				SDG:	1225222/223	1225223
				Lab Sample ID:	1225222004/1225223004	1225223005
				Sample Date/Time:	08/27/2022 15:30:00	08/25/2022 08:00:00
				Laboratory:	SGS Environmental	SGS Environmental
				QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**		
-	AK101	GRO	mg/L	2.2	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5	ND [0.288]	-
-	AK103	RRO	mg/L	1.1	0.288 [0.24] J	-
7439-92-1	6020B	Lead	mg/L	0.015	0.00173 [0.0005]	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046	ND [0.0002]	ND [0.0002]
108-86-1	8260D	Bromobenzene	mg/L	0.062	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022	0.000703 [0.0005] J	ND [0.0005]
74-87-3	8260D	Chloromethane	mg/L	0.19	ND [0.0005]	ND [0.0005]
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036	ND [0.0005]	ND [0.0005]
98-82-8	8260D	Cumene	mg/L	0.45	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087	ND [0.00025]	ND [0.00025]
74-95-3	8260D	Dibromomethane	mg/L	0.0083	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2	ND [0.0005]	ND [0.0005]
-	8260D	Freon-113	mg/L	-	ND [0.005]	ND [0.005]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

					Location ID:	TW6B	TB01W
					Sample ID:	22MAH-TW6b-GW	22MAH-TB01W
					SDG:	1225222/223	1225223
					Lab Sample ID:	1225222004/1225223004	1225223005
					Sample Date/Time:	08/27/2022 15:30:00	08/25/2022 08:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**			
75-71-8	8260D	Freon-12	mg/L	0.2		ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014		ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-		ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6		ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11		ND [0.005]	ND [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14		ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017		ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1		ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-		ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041		ND [0.0005]	ND [0.0005]
99-87-6	8260D	p-Cymene	mg/L	-		ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66		ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2		ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2		ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028		ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69		ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1		ND [0.0005]	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047		ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36		ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019		ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41		ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19		ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075		ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011		0.0000249 [0.0000245] J,B	-
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036		0.0000322 [0.0000245] J,B	-
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53		ND [0.0000245]	-
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26		ND [0.0000245]	-
120-12-7	8270DSIM	Anthracene	mg/L	0.043		ND [0.0000245]	-
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003		ND [0.0000245]	-
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025		ND [0.0000098]	-
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025		ND [0.0000245]	-
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026		ND [0.0000245]	-
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008		ND [0.0000245]	-
218-01-9	8270DSIM	Chrysene	mg/L	0.002		ND [0.0000245]	-
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025		ND [0.0000098]	-
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26		ND [0.0000245]	-
86-73-7	8270DSIM	Fluorene	mg/L	0.29		ND [0.0000245]	-
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019		ND [0.0000245]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.3 Temporary Well Sample Results

				Location ID:	TW6B	TB01W
				Sample ID:	22MAH-TW6b-GW	22MAH-TB01W
				SDG:	1225222/223	1225223
				Lab Sample ID:	1225222004/1225223004	1225223005
				Sample Date/Time:	08/27/2022 15:30:00	08/25/2022 08:00:00
				Laboratory:	SGS Environmental	SGS Environmental
				QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**		
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017	ND [0.000049]	-
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17	ND [0.000049]	-
129-00-0	8270DSIM	Pyrene	mg/L	0.12	ND [0.0000245]	-

Notes:

[1]18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021)

Bold = Result exceeds ADEC Groundwater Human Health Levels.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/L = milligram(s) per liter

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

JS = The result was an estimated value biased high (+) or low (-) because at least one surrogate failed recovery criteria for the sample.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB3b	SB3b	SB6b	SB6b
						Sample ID:	22MAH-SB3b-SO2-4	22MAH-SB3b-SO9_5_10	22MAH-SB6b-SO2-4	22MAH-SB6b-SO9_5-10
						SDG:	1225240	1225240	1225240	1225240
						Lab Sample ID:	1225240011	1225240010	1225240002	1225240001
						Sample Date/Time:	08/26/2022 15:30:00	08/26/2022 15:15:00	08/24/2022 12:18:00	08/24/2022 11:55:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Primay Sample	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**					
-	A2540G	Total Solids	Percent	-	-		90.7	84	72.5	86.8
-	AK101	GRO	mg/kg	300	-		2.55 [2.31] J,B	3.81 [3.51] J,B	3.1 [3.61] J,B	1.83 [2.16] J,B
-	AK102	DRO	mg/kg	250	-		ND [10.9]	ND [11.9]	24.3 [13.8] J,B	33.6 [11.5] B
-	AK103	RRO	mg/kg	10000	-		59.2 [55] J	ND [59.5]	211 [69]	218 [57.5]
7439-92-1	6020B	Lead	mg/kg	400	100		5.3 [0.109]	3.39 [0.116]	9.79 [0.132]	2.95 [0.109]
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-		ND [0.0184]	ND [0.0281] E	ND [0.0289] E	ND [0.0173]
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-		ND [0.00185]	ND [0.00281]	ND [0.00288]	ND [0.00173]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-		ND [0.000925]	ND [0.00141] E	ND [0.00144] E	ND [0.000865]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-		ND [0.00185] E	ND [0.00281] E	ND [0.00288] E	ND [0.00173] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	-	-		ND [0.0925] E	ND [0.141] E	ND [0.144] E	ND [0.0865] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10		ND [0.00185]	ND [0.00281]	ND [0.00288]	ND [0.00173]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-		ND [0.00925]	ND [0.0141]	ND [0.0144]	ND [0.00865]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-		ND [0.00925]	ND [0.0141]	ND [0.0144]	ND [0.00865]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
95-49-8	8260D	2-Chlorotoluene	mg/kg	-	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-		ND [0.111] E	ND [0.169] E	ND [0.173] E	ND [0.104]
106-43-4	8260D	4-Chlorotoluene	mg/kg	-	-		ND [0.0184]	ND [0.0281]	ND [0.0289]	ND [0.0173]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-		ND [0.231]	ND [0.351]	ND [0.361]	ND [0.216]
67-64-1	8260D	Acetone	mg/kg	38	-		ND [0.231]	ND [0.351]	ND [0.361]	ND [0.216]
71-43-2	8260D	Benzene	mg/kg	0.022	10		ND [0.0116]	ND [0.0176]	ND [0.0181]	ND [0.0108]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
74-97-5	8260D	Bromochloromethane	mg/kg	-	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-		ND [0.00185]	ND [0.00281]	ND [0.00288]	ND [0.00173]
75-25-2	8260D	Bromoform	mg/kg	0.1	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-		ND [0.0184]	ND [0.0281] E	ND [0.0289] E	ND [0.0173]
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10		ND [0.0116]	ND [0.0176]	ND [0.0181]	ND [0.0108]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
75-00-3	8260D	Chloroethane	mg/kg	72	-		ND [0.185]	ND [0.281]	ND [0.289]	ND [0.173]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120		ND [0.00555]	ND [0.0084] E	ND [0.00865] E	ND [0.0052]
74-87-3	8260D	Chloromethane	mg/kg	0.61	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-		ND [0.0116]	ND [0.0176]	ND [0.0181]	ND [0.0108]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
98-82-8	8260D	Cumene	mg/kg	5.6	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-		ND [0.00462] E	ND [0.007] E	ND [0.0072] E	ND [0.00432] E
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-		ND [0.0231]	ND [0.0351] E	ND [0.036] E	ND [0.0216]
106-93-4	8260D	EDB	mg/kg	0.00024	-		ND [0.00139] E	ND [0.00211] E	ND [0.00217] E	ND [0.00129] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB3b	SB3b	SB6b	SB6b
						Sample ID:	22MAH-SB3b-SO2-4	22MAH-SB3b-SO9_5_10	22MAH-SB6b-SO2-4	22MAH-SB6b-SO9_5-10
						SDG:	1225240	1225240	1225240	1225240
						Lab Sample ID:	1225240011	1225240010	1225240002	1225240001
						Sample Date/Time:	08/26/2022 15:30:00	08/26/2022 15:15:00	08/24/2022 12:18:00	08/24/2022 11:55:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Primay Sample	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**					
75-69-4	8260D	Freon-11	mg/kg	41	-		ND [0.0461]	ND [0.07]	ND [0.072]	ND [0.0432]
-	8260D	Freon-113	mg/kg	-	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
75-71-8	8260D	Freon-12	mg/kg	3.9	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10		ND [0.0184]	ND [0.0281] E	ND [0.0289] E	ND [0.0173]
-	8260D	m,p-Xylene	mg/kg	-	-		0.0372 [0.0461] J	ND [0.07]	ND [0.072]	ND [0.0432]
78-93-3	8260D	MEK	mg/kg	15	4000		ND [0.231]	ND [0.351]	ND [0.361]	ND [0.216]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
1634-04-4	8260D	MTBE	mg/kg	0.4	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
-	8260D	o-Xylene	mg/kg	-	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
127-18-4	8260D	PCE	mg/kg	0.19	14		ND [0.0116]	ND [0.0176]	ND [0.0181]	ND [0.0108]
99-87-6	8260D	p-Cymene	mg/kg	-	-		ND [0.074]	ND [0.113]	ND [0.116]	ND [0.069]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
100-42-5	8260D	Styrene	mg/kg	10	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
79-01-6	8260D	TCE	mg/kg	0.011	10		ND [0.00925]	ND [0.0141] E	ND [0.0144] E	ND [0.00865]
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
108-88-3	8260D	Toluene	mg/kg	6.7	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-		ND [0.0116]	ND [0.0176]	ND [0.0181] E	ND [0.0108]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-		ND [0.0231]	ND [0.0351]	ND [0.036]	ND [0.0216]
75-01-4	8260D	VC	mg/kg	0.0008	4		ND [0.00074]	ND [0.00113] E	ND [0.00116] E	ND [0.00069]
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-		ND [0.0925]	ND [0.141]	ND [0.144]	ND [0.0865]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-		ND [0.069]	ND [0.106]	ND [0.108]	ND [0.065]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-		ND [0.000116]	ND [0.000175]	ND [0.00018]	ND [0.000108]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/kg	0.41	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
91-57-6	8270DSIM	2-Methylnaphthalene	mg/kg	1.3	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
83-32-9	8270DSIM	Acenaphthene	mg/kg	37	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
208-96-8	8270DSIM	Acenaphthylene	mg/kg	18	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
120-12-7	8270DSIM	Anthracene	mg/kg	390	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
56-55-3	8270DSIM	Benzo(a)anthracene	mg/kg	0.7	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
50-32-8	8270DSIM	Benzo(a)pyrene	mg/kg	1.5	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/kg	15	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/kg	2300	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/kg	150	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
218-01-9	8270DSIM	Chrysene	mg/kg	600	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/kg	1.5	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
206-44-0	8270DSIM	Fluoranthene	mg/kg	590	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
86-73-7	8270DSIM	Fluorene	mg/kg	36	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/kg	15	-		ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB3b	SB3b	SB6b	SB6b
					Sample ID:	22MAH-SB3b-SO2-4	22MAH-SB3b-SO9_5_10	22MAH-SB6b-SO2-4	22MAH-SB6b-SO9_5-10
					SDG:	1225240	1225240	1225240	1225240
					Lab Sample ID:	1225240011	1225240010	1225240002	1225240001
					Sample Date/Time:	08/26/2022 15:30:00	08/26/2022 15:15:00	08/24/2022 12:18:00	08/24/2022 11:55:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Primay Sample	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**				
91-20-3	8270DSIM	Naphthalene	mg/kg	0.038	-	ND [0.0109]	ND [0.0118]	ND [0.0137]	ND [0.0114]
85-01-8	8270DSIM	Phenanthrene	mg/kg	39	-	ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]
129-00-0	8270DSIM	Pyrene	mg/kg	87	-	ND [0.0136]	ND [0.0148]	ND [0.0171]	ND [0.0143]

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

TCLP = Toxicity Characteristic Leaching Procedure

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB7b	SB7b	SB7b	SB8b
						Sample ID:	22MAH-SB7b-SO6-8	22MAH-SB7b-SO10-10_5	22MAH-SB7b-SO10-10_5A	22MAH-SB8b-SO6-8
						SDG:	1225240	1225240	1225240	1225240
						Lab Sample ID:	1225240007	1225240005	1225240006	1225240012
						Sample Date/Time:	08/25/2022 11:15:00	08/25/2022 10:48:00	08/25/2022 10:48:0	08/27/2022 09:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Primay Sample	Field Duplicate	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**					
-	A2540G	Total Solids	Percent	-	-		72.2	74.1	74.1	94.8
-	AK101	GRO	mg/kg	300	-		4.27 [3.91] J,B	2.59 [3.54] J,B	2.61 [3.29] J,B	2.45 [2.68] J,B
-	AK102	DRO	mg/kg	250	-		31.4 [13.7] B	16.4 [13.4] J,B	19.6 [13.5] J,B	15.2 [10.4] J
-	AK103	RRO	mg/kg	10000	-		310 [68.5]	160 [67]	178 [67.5]	ND [52.5]
7439-92-1	6020B	Lead	mg/kg	400	100		6.15 [0.137]	12.5 [0.13]	12.7 [0.126]	4.89 [0.102]
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-		ND [0.0313] E	ND [0.0284] E	ND [0.0263] E	ND [0.0214]
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-		0.106 [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-		ND [0.00313] E	ND [0.00284]	ND [0.00263]	ND [0.00214]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-		ND [0.00156] E	ND [0.00142] E	ND [0.00131]	ND [0.00107]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-		ND [0.00313] E	ND [0.00284] E	ND [0.00263] E	ND [0.00214] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-		ND [0.156] E	ND [0.142]	ND [0.132]	ND [0.107]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-		ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	-	-		ND [0.156] E	ND [0.142] E	ND [0.132] E	ND [0.107] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10		ND [0.00313]	ND [0.00284]	ND [0.00263]	ND [0.00214]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-		ND [0.0156]	ND [0.0142]	ND [0.0132]	ND [0.0107]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-		ND [0.0156]	ND [0.0142]	ND [0.0132]	ND [0.0107]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150		ND [0.039] E	ND [0.0355]	ND [0.0329]	ND [0.0268]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
95-49-8	8260D	2-Chlorotoluene	mg/kg	-	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-		ND [0.188] E	ND [0.17] E	ND [0.158] E	ND [0.129] E
106-43-4	8260D	4-Chlorotoluene	mg/kg	-	-		ND [0.0313]	ND [0.0284]	ND [0.0263]	ND [0.0214]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-		ND [0.391]	ND [0.355]	ND [0.329]	ND [0.268]
67-64-1	8260D	Acetone	mg/kg	38	-		ND [0.391]	ND [0.355]	ND [0.329]	ND [0.268]
71-43-2	8260D	Benzene	mg/kg	0.022	10		ND [0.0195]	ND [0.0177]	ND [0.0164]	ND [0.0134]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
74-97-5	8260D	Bromochloromethane	mg/kg	-	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-		ND [0.00313]	ND [0.00284]	ND [0.00263]	ND [0.00214]
75-25-2	8260D	Bromoform	mg/kg	0.1	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-		ND [0.0313] E	ND [0.0284] E	ND [0.0263] E	ND [0.0214]
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-		ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10		ND [0.0195]	ND [0.0177]	ND [0.0164]	ND [0.0134]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
75-00-3	8260D	Chloroethane	mg/kg	72	-		ND [0.313]	ND [0.284]	ND [0.263]	ND [0.214]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120		ND [0.00935] E	ND [0.0085] E	ND [0.0079] E	ND [0.00645]
74-87-3	8260D	Chloromethane	mg/kg	0.61	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-		ND [0.0195]	ND [0.0177]	ND [0.0164]	ND [0.0134]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
98-82-8	8260D	Cumene	mg/kg	5.6	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-		ND [0.0078] E	ND [0.0071] E	ND [0.00655] E	ND [0.00535] E
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-		ND [0.039] E	ND [0.0355] E	ND [0.0329] E	ND [0.0268] E
106-93-4	8260D	EDB	mg/kg	0.00024	-		ND [0.00234] E	ND [0.00213] E	ND [0.00197] E	ND [0.00161] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-		ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB7b	SB7b	SB7b	SB8b
					Sample ID:	22MAH-SB7b-SO6-8	22MAH-SB7b-SO10-10_5	22MAH-SB7b-SO10-10_5A	22MAH-SB8b-SO6-8
					SDG:	1225240	1225240	1225240	1225240
					Lab Sample ID:	1225240007	1225240005	1225240006	1225240012
					Sample Date/Time:	08/25/2022 11:15:00	08/25/2022 10:48:00	08/25/2022 10:48:0	08/27/2022 09:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Primay Sample	Field Duplicate	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**				
75-69-4	8260D	Freon-11	mg/kg	41	-	ND [0.078]	ND [0.071]	ND [0.0655]	ND [0.0535]
-	8260D	Freon-113	mg/kg	-	-	ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
75-71-8	8260D	Freon-12	mg/kg	3.9	-	ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.0313] E	ND [0.0284] E	ND [0.0263] E	ND [0.0214] E
-	8260D	m,p-Xylene	mg/kg	-	-	ND [0.078]	ND [0.071]	ND [0.0655]	ND [0.0535]
78-93-3	8260D	MEK	mg/kg	15	4000	ND [0.391]	ND [0.355]	ND [0.329]	ND [0.268]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-	ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
1634-04-4	8260D	MTBE	mg/kg	0.4	-	ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-	ND [0.039] E	ND [0.0355]	ND [0.0329]	ND [0.0268]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
-	8260D	o-Xylene	mg/kg	-	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
127-18-4	8260D	PCE	mg/kg	0.19	14	ND [0.0195]	ND [0.0177]	ND [0.0164]	ND [0.0134]
99-87-6	8260D	p-Cymene	mg/kg	-	-	ND [0.125]	ND [0.114]	ND [0.105]	ND [0.0855]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
100-42-5	8260D	Styrene	mg/kg	10	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
79-01-6	8260D	TCE	mg/kg	0.011	10	ND [0.0156] E	ND [0.0142] E	ND [0.0132] E	ND [0.0107]
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
108-88-3	8260D	Toluene	mg/kg	6.7	-	0.0499 [0.039] J	ND [0.0355]	ND [0.0329]	ND [0.0268]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-	ND [0.0195] E	ND [0.0177]	ND [0.0164]	ND [0.0134]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-	ND [0.039]	ND [0.0355]	ND [0.0329]	ND [0.0268]
75-01-4	8260D	VC	mg/kg	0.0008	4	ND [0.00125] E	ND [0.00114] E	ND [0.00105] E	ND [0.000855] E
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-	ND [0.156]	ND [0.142]	ND [0.132]	ND [0.107]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-	ND [0.117]	ND [0.107]	ND [0.0985]	ND [0.0805]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-	ND [0.000195]	ND [0.000177]	ND [0.000164]	ND [0.000134]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/kg	0.41	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
91-57-6	8270DSIM	2-Methylnaphthalene	mg/kg	1.3	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
83-32-9	8270DSIM	Acenaphthene	mg/kg	37	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
208-96-8	8270DSIM	Acenaphthylene	mg/kg	18	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
120-12-7	8270DSIM	Anthracene	mg/kg	390	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
56-55-3	8270DSIM	Benzo(a)anthracene	mg/kg	0.7	-	ND [0.0172]	0.0133 [0.0167] J	0.0175 [0.0166] J	ND [0.0131]
50-32-8	8270DSIM	Benzo(a)pyrene	mg/kg	1.5	-	ND [0.0172]	0.0206 [0.0167] J	0.0246 [0.0166] J	ND [0.0131]
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/kg	15	-	ND [0.0172]	0.0279 [0.0167] J	0.04 [0.0166]	ND [0.0131]
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/kg	2300	-	ND [0.0172]	0.0178 [0.0167] J	0.0202 [0.0166] J	ND [0.0131]
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/kg	150	-	ND [0.0172]	0.0104 [0.0167] J	0.0148 [0.0166] J	ND [0.0131]
218-01-9	8270DSIM	Chrysene	mg/kg	600	-	ND [0.0172]	0.0227 [0.0167] J	0.0314 [0.0166] J	ND [0.0131]
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/kg	1.5	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
206-44-0	8270DSIM	Fluoranthene	mg/kg	590	-	ND [0.0172]	0.0388 [0.0167]	0.0436 [0.0166]	ND [0.0131]
86-73-7	8270DSIM	Fluorene	mg/kg	36	-	ND [0.0172]	ND [0.0167]	ND [0.0166]	ND [0.0131]
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/kg	15	-	ND [0.0172]	0.014 [0.0167] J	0.0174 [0.0166] J	ND [0.0131]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB7b	SB7b	SB7b	SB8b
					Sample ID:	22MAH-SB7b-SO6-8	22MAH-SB7b-SO10-10_5	22MAH-SB7b-SO10-10_5A	22MAH-SB8b-SO6-8
					SDG:	1225240	1225240	1225240	1225240
					Lab Sample ID:	1225240007	1225240005	1225240006	1225240012
					Sample Date/Time:	08/25/2022 11:15:00	08/25/2022 10:48:00	08/25/2022 10:48:0	08/27/2022 09:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Primay Sample	Field Duplicate	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**				
91-20-3	8270DSIM	Naphthalene	mg/kg	0.038	-	ND [0.0138]	ND [0.0134]	ND [0.0133]	ND [0.0105]
85-01-8	8270DSIM	Phenanthrene	mg/kg	39	-	ND [0.0172]	0.0157 [0.0167] J	0.0147 [0.0166] J	ND [0.0131]
129-00-0	8270DSIM	Pyrene	mg/kg	87	-	ND [0.0172]	0.0363 [0.0167]	0.0473 [0.0166]	ND [0.0131]

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

TCLP = Toxicity Characteristic Leaching Procedure

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB8b	SB8b	SB12	SB12
						Sample ID:	22MAH-SB8b-SO10-10_5	22MAH-SB8b-SO10-10_5A	22MAH-SB12-SO2-4	22MAH-SB12-SO10_5_11
						SDG:	1225240	1225240	1225240	1225240
						Lab Sample ID:	1225240013	1225240014	1225240009	1225240008
						Sample Date/Time:	08/27/2022 09:15:00	08/27/2022 09:15:0	08/25/2022 16:55:00	08/25/2022 16:55:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Field Duplicate	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**					
-	A2540G	Total Solids	Percent	-	-		83.8	88	96.1	74.2
-	AK101	GRO	mg/kg	300	-		2.89 [3.37] J,B	2.33 [2.95] J,B	1.79 [2.11] J,B	2.65 [3.25] J,B
-	AK102	DRO	mg/kg	250	-		53.7 [11.9]	77.3 [11.3]	30.9 [10.3] B	ND [13.4]
-	AK103	RRO	mg/kg	10000	-		61 [59.5] J	110 [56] J	200 [51.5]	72.3 [67] J
7439-92-1	6020B	Lead	mg/kg	400	100		7.72 [0.116]	8.64 [0.105]	27.6 [0.0955]	7.78 [0.134]
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-		ND [0.0269] E	ND [0.0236] E	ND [0.0169]	ND [0.0261] E
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-		ND [0.00269]	ND [0.00236]	ND [0.00169]	ND [0.00261]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-		ND [0.00135]	ND [0.00118]	ND [0.000845]	ND [0.0013]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-		ND [0.00269] E	ND [0.00236] E	ND [0.00169] E	ND [0.00261] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	-	-		ND [0.135] E	ND [0.118] E	ND [0.0845] E	ND [0.13] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10		ND [0.00269]	ND [0.00236]	ND [0.00169]	ND [0.00261]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-		ND [0.0134]	ND [0.0118]	ND [0.00845]	ND [0.013]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-		ND [0.0134]	ND [0.0118]	ND [0.00845]	ND [0.013]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150		0.0227 [0.0336] J	ND [0.0295]	ND [0.0211]	ND [0.0325]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
95-49-8	8260D	2-Chlorotoluene	mg/kg	-	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-		ND [0.162] E	ND [0.142] E	ND [0.102]	ND [0.156] E
106-43-4	8260D	4-Chlorotoluene	mg/kg	-	-		ND [0.0269]	ND [0.0236]	ND [0.0169]	ND [0.0261]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-		ND [0.337]	ND [0.295]	ND [0.211]	ND [0.326]
67-64-1	8260D	Acetone	mg/kg	38	-		ND [0.337]	ND [0.295]	ND [0.211]	ND [0.326]
71-43-2	8260D	Benzene	mg/kg	0.022	10		ND [0.0168]	ND [0.0148]	ND [0.0106]	ND [0.0163]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
74-97-5	8260D	Bromochloromethane	mg/kg	-	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-		ND [0.00269]	ND [0.00236]	ND [0.00169]	ND [0.00261]
75-25-2	8260D	Bromoform	mg/kg	0.1	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-		ND [0.0269] E	ND [0.0236]	ND [0.0169]	ND [0.0261] E
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10		ND [0.0168]	ND [0.0148]	ND [0.0106]	ND [0.0163]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
75-00-3	8260D	Chloroethane	mg/kg	72	-		ND [0.269]	ND [0.236]	ND [0.169]	ND [0.261]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120		ND [0.00805] E	ND [0.0071]	ND [0.00505]	ND [0.0078] E
74-87-3	8260D	Chloromethane	mg/kg	0.61	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-		ND [0.0168]	ND [0.0148]	ND [0.0106]	ND [0.0163]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
98-82-8	8260D	Cumene	mg/kg	5.6	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-		ND [0.00675] E	ND [0.0059] E	ND [0.00422] E	ND [0.0065] E
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-		ND [0.0336] E	ND [0.0295] E	ND [0.0211]	ND [0.0325] E
106-93-4	8260D	EDB	mg/kg	0.00024	-		ND [0.00202] E	ND [0.00177] E	ND [0.00126] E	ND [0.00195] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB8b	SB8b	SB12	SB12
						Sample ID:	22MAH-SB8b-SO10-10_5	22MAH-SB8b-SO10-10_5A	22MAH-SB12-SO2-4	22MAH-SB12-SO10_5_11
						SDG:	1225240	1225240	1225240	1225240
						Lab Sample ID:	1225240013	1225240014	1225240009	1225240008
						Sample Date/Time:	08/27/2022 09:15:00	08/27/2022 09:15:0	08/25/2022 16:55:00	08/25/2022 16:55:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Field Duplicate	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**					
75-69-4	8260D	Freon-11	mg/kg	41	-		0.072 [0.0675] J,JL+	ND [0.059]	ND [0.0422]	ND [0.065]
-	8260D	Freon-113	mg/kg	-	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
75-71-8	8260D	Freon-12	mg/kg	3.9	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10		ND [0.0269] E	ND [0.0236] E	ND [0.0169]	ND [0.0261] E
-	8260D	m,p-Xylene	mg/kg	-	-		ND [0.0675]	ND [0.059]	ND [0.0422]	ND [0.065]
78-93-3	8260D	MEK	mg/kg	15	4000		ND [0.337]	ND [0.295]	ND [0.211]	ND [0.326]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
1634-04-4	8260D	MTBE	mg/kg	0.4	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
-	8260D	o-Xylene	mg/kg	-	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
127-18-4	8260D	PCE	mg/kg	0.19	14		ND [0.0168]	ND [0.0148]	ND [0.0106]	ND [0.0163]
99-87-6	8260D	p-Cymene	mg/kg	-	-		ND [0.108]	ND [0.0945]	ND [0.0675]	ND [0.104]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
100-42-5	8260D	Styrene	mg/kg	10	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
79-01-6	8260D	TCE	mg/kg	0.011	10		ND [0.0134] E	ND [0.0118] E	ND [0.00845]	ND [0.013] E
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
108-88-3	8260D	Toluene	mg/kg	6.7	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-		ND [0.0168]	ND [0.0148]	ND [0.0106]	ND [0.0163]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-		ND [0.0336]	ND [0.0295]	ND [0.0211]	ND [0.0325]
75-01-4	8260D	VC	mg/kg	0.0008	4		ND [0.00108] E	ND [0.000945] E	ND [0.000675]	ND [0.00104] E
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-		ND [0.135]	ND [0.118]	ND [0.0845]	ND [0.13]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-		ND [0.101]	ND [0.0885]	ND [0.0635]	ND [0.0975]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-		ND [0.000168]	ND [0.000147]	ND [0.000106]	ND [0.000163]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/kg	0.41	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
91-57-6	8270DSIM	2-Methylnaphthalene	mg/kg	1.3	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
83-32-9	8270DSIM	Acenaphthene	mg/kg	37	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
208-96-8	8270DSIM	Acenaphthylene	mg/kg	18	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
120-12-7	8270DSIM	Anthracene	mg/kg	390	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
56-55-3	8270DSIM	Benzo(a)anthracene	mg/kg	0.7	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
50-32-8	8270DSIM	Benzo(a)pyrene	mg/kg	1.5	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/kg	15	-		ND [0.0148]	ND [0.0142]	0.00729 [0.0129] J	ND [0.0168]
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/kg	2300	-		ND [0.0148]	ND [0.0142]	0.00944 [0.0129] J	ND [0.0168]
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/kg	150	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
218-01-9	8270DSIM	Chrysene	mg/kg	600	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/kg	1.5	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
206-44-0	8270DSIM	Fluoranthene	mg/kg	590	-		ND [0.0148]	ND [0.0142]	0.00799 [0.0129] J	ND [0.0168]
86-73-7	8270DSIM	Fluorene	mg/kg	36	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/kg	15	-		ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB8b	SB8b	SB12	SB12
					Sample ID:	22MAH-SB8b-SO10-10_5	22MAH-SB8b-SO10-10_5A	22MAH-SB12-SO2-4	22MAH-SB12-SO10_5_11
					SDG:	1225240	1225240	1225240	1225240
					Lab Sample ID:	1225240013	1225240014	1225240009	1225240008
					Sample Date/Time:	08/27/2022 09:15:00	08/27/2022 09:15:0	08/25/2022 16:55:00	08/25/2022 16:55:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Field Duplicate	Primay Sample	Primay Sample
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**				
91-20-3	8270DSIM	Naphthalene	mg/kg	0.038	-	ND [0.0119]	ND [0.0114]	ND [0.0104]	ND [0.0134]
85-01-8	8270DSIM	Phenanthrene	mg/kg	39	-	ND [0.0148]	ND [0.0142]	ND [0.0129]	ND [0.0168]
129-00-0	8270DSIM	Pyrene	mg/kg	87	-	ND [0.0148]	ND [0.0142]	0.00772 [0.0129] J	ND [0.0168]

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

TCLP = Toxicity Characteristic Leaching Procedure

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

						Location ID:	SB13	SB13	TB01S
						Sample ID:	22MAH-SB13-SO8-10	22MAH-SB13-SO10-10_5	22MAH-TB01S
						SDG:	1225240	1225240	1225240
						Lab Sample ID:	1225240004	1225240003	1225240015
						Sample Date/Time:	08/24/2022 16:15:00	08/24/2022 16:00:00	08/24/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primay Sample	Primay Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**				
-	A2540G	Total Solids	Percent	-	-		74.8	76.7	-
-	AK101	GRO	mg/kg	300	-		4.13 [3.97] J,B	3.55 [3.97] J,B	1.01 [1.26] J,B
-	AK102	DRO	mg/kg	250	-		19 [13.2] J,B	15.2 [12.9] J,B	-
-	AK103	RRO	mg/kg	10000	-		169 [66]	106 [64.5] J	-
7439-92-1	6020B	Lead	mg/kg	400	100		12.2 [0.123]	10.4 [0.128]	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-		ND [0.0317] E	ND [0.0318] E	ND [0.0101]
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-		ND [0.00317] E	ND [0.00317] E	ND [0.00101]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-		ND [0.00159] E	ND [0.00159] E	ND [0.000505]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14		ND [0.0396]	ND [0.0396]	ND [0.0126]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-		ND [0.00317] E	ND [0.00317] E	ND [0.00101] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-		ND [0.159] E	ND [0.159] E	ND [0.0505]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-		ND [0.159]	ND [0.159]	ND [0.0505]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	-	-		ND [0.159] E	ND [0.159] E	ND [0.0505] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10		ND [0.00317]	ND [0.00317]	ND [0.00101]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-		ND [0.0159]	ND [0.0159]	ND [0.00505]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-		0.0277 [0.0396] J	ND [0.0396]	ND [0.0126]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-		ND [0.0159]	ND [0.0159]	ND [0.00505]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150		ND [0.0396] E	ND [0.0396] E	ND [0.0126]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
95-49-8	8260D	2-Chlorotoluene	mg/kg	-	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-		ND [0.19] E	ND [0.191] E	ND [0.0605]
106-43-4	8260D	4-Chlorotoluene	mg/kg	-	-		ND [0.0317]	ND [0.0318]	ND [0.0101]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-		ND [0.397]	ND [0.397]	ND [0.126]
67-64-1	8260D	Acetone	mg/kg	38	-		ND [0.397]	ND [0.397]	ND [0.126]
71-43-2	8260D	Benzene	mg/kg	0.022	10		ND [0.0198]	ND [0.0199]	ND [0.0063]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
74-97-5	8260D	Bromochloromethane	mg/kg	-	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-		ND [0.00317]	ND [0.00317]	ND [0.00101]
75-25-2	8260D	Bromoform	mg/kg	0.1	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-		ND [0.0317] E	ND [0.0318] E	ND [0.0101]
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-		ND [0.159]	ND [0.159]	ND [0.0505]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10		ND [0.0198]	ND [0.0199]	ND [0.0063]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000		ND [0.0396]	ND [0.0396]	ND [0.0126]
75-00-3	8260D	Chloroethane	mg/kg	72	-		ND [0.317]	ND [0.318]	ND [0.101]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120		ND [0.0095] E	ND [0.0095] E	ND [0.00302]
74-87-3	8260D	Chloromethane	mg/kg	0.61	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-		ND [0.0198]	ND [0.0199]	ND [0.0063]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
98-82-8	8260D	Cumene	mg/kg	5.6	-		ND [0.0396]	ND [0.0396]	ND [0.0126]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-		ND [0.00795] E	ND [0.00795] E	ND [0.00252]
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-		ND [0.0396] E	ND [0.0396] E	ND [0.0126]
106-93-4	8260D	EDB	mg/kg	0.00024	-		ND [0.00238] E	ND [0.00238] E	ND [0.000755] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-		ND [0.0396]	ND [0.0396]	ND [0.0126]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB13	SB13	TB01S
					Sample ID:	22MAH-SB13-SO8-10	22MAH-SB13-SO10-10_5	22MAH-TB01S
					SDG:	1225240	1225240	1225240
					Lab Sample ID:	1225240004	1225240003	1225240015
					Sample Date/Time:	08/24/2022 16:15:00	08/24/2022 16:00:00	08/24/2022 08:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Primay Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**			
75-69-4	8260D	Freon-11	mg/kg	41	-	ND [0.0795]	ND [0.0795]	ND [0.0253]
-	8260D	Freon-113	mg/kg	-	-	ND [0.159]	ND [0.159]	ND [0.0505]
75-71-8	8260D	Freon-12	mg/kg	3.9	-	ND [0.159]	ND [0.159]	ND [0.0505]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.0317] E	ND [0.0318] E	ND [0.0101]
-	8260D	m,p-Xylene	mg/kg	-	-	0.113 [0.0795] J	0.0542 [0.0795] J	ND [0.0253]
78-93-3	8260D	MEK	mg/kg	15	4000	ND [0.397]	ND [0.397]	ND [0.126]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-	ND [0.159]	ND [0.159]	ND [0.0505]
1634-04-4	8260D	MTBE	mg/kg	0.4	-	ND [0.159]	ND [0.159]	ND [0.0505]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-	ND [0.0396] E	ND [0.0396] E	ND [0.0126]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
-	8260D	o-Xylene	mg/kg	-	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
127-18-4	8260D	PCE	mg/kg	0.19	14	ND [0.0198]	ND [0.0199]	ND [0.0063]
99-87-6	8260D	p-Cymene	mg/kg	-	-	ND [0.127]	ND [0.127]	ND [0.0404]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
100-42-5	8260D	Styrene	mg/kg	10	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
79-01-6	8260D	TCE	mg/kg	0.011	10	ND [0.0159] E	ND [0.0159] E	ND [0.00505]
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
108-88-3	8260D	Toluene	mg/kg	6.7	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-	ND [0.0198] E	ND [0.0199] E	ND [0.0063]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-	ND [0.0396]	ND [0.0396]	ND [0.0126]
75-01-4	8260D	VC	mg/kg	0.0008	4	ND [0.00127] E	ND [0.00127] E	ND [0.000404]
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-	ND [0.159]	ND [0.159]	ND [0.0505]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-	0.113 [0.119] J	ND [0.119]	ND [0.0379]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-	ND [0.000198]	ND [0.000199]	ND [0.000063]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/kg	0.41	-	ND [0.0167]	ND [0.0159]	-
91-57-6	8270DSIM	2-Methylnaphthalene	mg/kg	1.3	-	ND [0.0167]	ND [0.0159]	-
83-32-9	8270DSIM	Acenaphthene	mg/kg	37	-	ND [0.0167]	ND [0.0159]	-
208-96-8	8270DSIM	Acenaphthylene	mg/kg	18	-	ND [0.0167]	ND [0.0159]	-
120-12-7	8270DSIM	Anthracene	mg/kg	390	-	ND [0.0167]	ND [0.0159]	-
56-55-3	8270DSIM	Benzo(a)anthracene	mg/kg	0.7	-	ND [0.0167]	ND [0.0159]	-
50-32-8	8270DSIM	Benzo(a)pyrene	mg/kg	1.5	-	ND [0.0167]	ND [0.0159]	-
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/kg	15	-	ND [0.0167]	ND [0.0159]	-
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/kg	2300	-	ND [0.0167]	ND [0.0159]	-
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/kg	150	-	ND [0.0167]	ND [0.0159]	-
218-01-9	8270DSIM	Chrysene	mg/kg	600	-	ND [0.0167]	ND [0.0159]	-
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/kg	1.5	-	ND [0.0167]	ND [0.0159]	-
206-44-0	8270DSIM	Fluoranthene	mg/kg	590	-	ND [0.0167]	ND [0.0159]	-
86-73-7	8270DSIM	Fluorene	mg/kg	36	-	ND [0.0167]	ND [0.0159]	-
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/kg	15	-	ND [0.0167]	ND [0.0159]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.4 Soil Boring Sample Results

					Location ID:	SB13	SB13	TB01S
					Sample ID:	22MAH-SB13-SO8-10	22MAH-SB13-SO10-10_5	22MAH-TB01S
					SDG:	1225240	1225240	1225240
					Lab Sample ID:	1225240004	1225240003	1225240015
					Sample Date/Time:	08/24/2022 16:15:00	08/24/2022 16:00:00	08/24/2022 08:00:00
					Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental
					QA/QC:	Primay Sample	Primay Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**20 Times TCLP[2]**			
91-20-3	8270DSIM	Naphthalene	mg/kg	0.038	-	ND [0.0134]	ND [0.0128]	-
85-01-8	8270DSIM	Phenanthrene	mg/kg	39	-	ND [0.0167]	ND [0.0159]	-
129-00-0	8270DSIM	Pyrene	mg/kg	87	-	ND [0.0167]	ND [0.0159]	-

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

CAS = Chemical Abstracts Service

GCL/SCL = groundwater/soil cleanup level

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

TCLP = Toxicity Characteristic Leaching Procedure

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

JL = The result was an estimated value biased high (+) or low (-) because the analyte failed recovery criteria in the LCS or LCSD sample or both.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
-	AK101	GRO	mg/L	2.2	-		ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5	-		ND [0.306]	0.364 [0.319] J	ND [0.326]	ND [0.326]	-
-	AK103	RRO	mg/L	1.1	-		0.216 [0.255] J	0.317 [0.266] J	ND [0.272]	ND [0.272]	-
7439-92-1	6020B	Lead	mg/L	0.015	5		0.000555 [0.0005] J,B	0.000495 [0.0005] J,B	0.000991 [0.0005] J,B	0.000487 [0.0005] J,B	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041	-		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28	0.7		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075	-		ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017	0.5		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048	7.5		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046	0.5		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
108-86-1	8260D	Bromobenzene	mg/L	0.062	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075	-		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078	100		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022	6		**0.00336 [0.0005]**	**0.00448 [0.0005]**	**0.00305 [0.0005]**	**0.00797 [0.0005]**	ND [0.0005]
74-87-3	8260D	Chloromethane	mg/L	0.19	-		ND [0.0005]	ND [0.0005]	0.00035 [0.0005] J	0.00038 [0.0005] J	ND [0.0005]
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-82-8	8260D	Cumene	mg/L	0.45	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
74-95-3	8260D	Dibromomethane	mg/L	0.0083	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075	-		ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2	-		ND [0.0005]	ND [0.0005]	0.00046 [0.0005] J	ND [0.0005]	ND [0.0005]
-	8260D	Freon-113	mg/L	-	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
75-71-8	8260D	Freon-12	mg/L	0.2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-	-		ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6	200		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	0.0468 [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041	0.7		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
99-87-6	8260D	p-Cymene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019	0.2		ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19	-		ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075	-		ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	0.0000169 [0.0000272] J	-
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
120-12-7	8270DSIM	Anthracene	mg/L	0.043	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025	-		ND [0.00001]	ND [0.0000102]	ND [0.0000107]	ND [0.0000109]	-
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
218-01-9	8270DSIM	Chrysene	mg/L	0.002	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025	-		ND [0.00001]	ND [0.0000102]	ND [0.0000107]	ND [0.0000109]	-
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
86-73-7	8270DSIM	Fluorene	mg/L	0.29	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017	-		ND [0.00005]	ND [0.000051]	ND [0.000053]	ND [0.0000545]	-
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17	-		ND [0.00005]	ND [0.000051]	ND [0.000053]	ND [0.0000545]	-
129-00-0	8270DSIM	Pyrene	mg/L	0.12	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
757124-72-4	EPA 537M BY ID	4:2 Fluorotelomer sulfonate	mg/L	-	-		ND [0.000011]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
27619-97-2	EPA 537M BY ID	6:2 Fluorotelomer sulfonate	mg/L	-	-		0.0000061 [0.000011] J	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
39108-34-4	EPA 537M BY ID	8:2 Fluorotelomer sulfonate	mg/L	-	-		ND [0.000011]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2991-50-6	EPA 537M BY ID	EtFOSAA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2355-31-9	EPA 537M BY ID	MeFOSAA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
335-77-3	EPA 537M BY ID	Perfluorodecanesulfonic acid	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
68259-12-1	EPA 537M BY ID	Perfluorononanesulfonic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
2706-91-4	EPA 537M BY ID	Perfluoropentanesulfonic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	0.000004 [0.0000067] J	ND [0.000028]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
2706-90-3	EPA 537M BY ID	Perfluoropentanoic acid	mg/L	-	-		0.0000108 [0.0000056] J	0.0000095 [0.000005] J	0.0000071 [0.0000067] J	ND [0.000028]	-
376-06-7	EPA 537M BY ID	Perfluorotetradecanoic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
72629-94-8	EPA 537M BY ID	Perfluorotridecanoic acid	mg/L	-	-		ND [0.000028]	ND [0.000025]	ND [0.0000067]	ND [0.000028]	-
375-22-4	EPA 537M BY ID	PFBA	mg/L	-	-		0.0000276 [0.000011]	0.0000078 [0.00001] J	0.000011 [0.000013] J	ND [0.000056]	-
375-73-5	EPA 537M BY ID	PFBS	mg/L	-	-		ND [0.0000056]	0.0000197 [0.000005]	0.0000105 [0.0000067] J	ND [0.000028]	-
335-76-2	EPA 537M BY ID	PFDA	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
307-55-1	EPA 537M BY ID	PFDoA	mg/L	-	-		ND [0.000028]	ND [0.000025]	ND [0.0000067]	ND [0.000028]	-
375-85-9	EPA 537M BY ID	PFHpA	mg/L	-	-		0.0000065 [0.0000056] J	0.0000067 [0.000005] J	0.0000046 [0.0000067] J	ND [0.000028]	-
375-92-8	EPA 537M BY ID	PFHPS	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
307-24-4	EPA 537M BY ID	PFHxA	mg/L	-	-		0.0000189 [0.0000056]	0.0000105 [0.000005]	0.00001 [0.0000067] J	ND [0.000028]	-
355-46-4	EPA 537M BY ID	PFHxS	mg/L	-	-		0.0000316 [0.0000056]	0.0000508 [0.000005]	0.0000255 [0.0000067]	0.0000506 [0.000028] J	-
375-95-1	EPA 537M BY ID	PFNA	mg/L	-	-		0.0000106 [0.0000056] J	0.0000059 [0.000005] J	0.0000094 [0.0000067] J	ND [0.000028]	-
335-67-1	EPA 537M BY ID	PFOA	mg/L	0.0004	-		0.000009 [0.0000056] J	0.0000159 [0.000005]	0.000009 [0.0000067] J	ND [0.000028]	-
1763-23-1	EPA 537M BY ID	PFOS	mg/L	0.0004	-		0.0000343 [0.0000056]	0.0000176 [0.000005]	0.0000114 [0.0000067] J	0.0000176 [0.000028] J	-
754-91-6	EPA 537M BY ID	PFOSA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2058-94-8	EPA 537M BY ID	PFUnA	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-

Notes:

[1] 18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021)
[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.
Bold = Result exceeds ADEC Groundwater Human Health Levels.
Bold = The result exceeds RCRA TCLP.
– = no criteria/not analyzed
[ ] = limit of detection (LOD)
CAS = Chemical Abstracts Service
GCL/SCL = groundwater/soil cleanup level
ID = identification
mg/L = milligram(s) per liter
ND = nondetect
QA/QC = quality assurance/quality control
RCRA = Resource Conservation Recovery Act
SDG = sample delivery group
TCLP = Toxicity Characteristic Leaching Procedure
J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.
E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.
B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
-	A2540G	Total Solids	Percent	-	-	87.2	-
-	AK101	GRO	mg/kg	300	-	2.8 [3.31] J,B	1.17 [1.26] J,B
-	AK102	DRO	mg/kg	250	-	ND [11.4]	-
-	AK103	RRO	mg/kg	10000	-	79.3 [57] J	-
7439-92-1	6020B	Lead	mg/kg	400	100	8.98 [0.115]	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-	ND [0.0265] E	ND [0.0101]
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-	ND [0.0331]	ND [0.0126]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-	ND [0.00265]	ND [0.001]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-	ND [0.00133]	ND [0.000505]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-	ND [0.0331]	ND [0.0126]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14	ND [0.0331]	ND [0.0126]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-	ND [0.0331]	ND [0.0126]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-	ND [0.00265] E	ND [0.001] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-	ND [0.133]	ND [0.0505]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-	ND [0.133]	ND [0.0505]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-	ND [0.0331]	ND [0.0126]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	0.0053	-	ND [0.133] E	ND [0.0505] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-	ND [0.0331]	ND [0.0126]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10	ND [0.00265]	ND [0.001]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-	ND [0.0133]	ND [0.00505]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-	ND [0.0331]	ND [0.0126]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-	ND [0.0331]	ND [0.0126]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-	ND [0.0133]	ND [0.00505]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150	ND [0.0331]	ND [0.0126]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-	ND [0.0331]	ND [0.0126]
95-49-8	8260D	2-Chlorotoluene	mg/kg	1600	-	ND [0.0331]	ND [0.0126]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-	ND [0.159] E	ND [0.0605]
106-43-4	8260D	4-Chlorotoluene	mg/kg	1600	-	ND [0.0265]	ND [0.0101]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-	ND [0.332]	ND [0.126]
67-64-1	8260D	Acetone	mg/kg	38	-	ND [0.332]	ND [0.126]
71-43-2	8260D	Benzene	mg/kg	0.022	10	ND [0.0166]	ND [0.0063]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-	ND [0.0331]	ND [0.0126]
74-97-5	8260D	Bromochloromethane	mg/kg	150	-	ND [0.0331]	ND [0.0126]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-	ND [0.00265]	ND [0.001]
75-25-2	8260D	Bromoform	mg/kg	0.1	-	ND [0.0331]	ND [0.0126]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-	ND [0.0265] E	ND [0.0101]
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-	ND [0.133]	ND [0.0505]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10	ND [0.0166]	ND [0.0063]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000	ND [0.0331]	ND [0.0126]
75-00-3	8260D	Chloroethane	mg/kg	72	-	ND [0.265]	ND [0.101]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120	ND [0.00795] E	ND [0.00302]
74-87-3	8260D	Chloromethane	mg/kg	0.61	-	ND [0.0331]	ND [0.0126]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-	ND [0.0166]	ND [0.0063]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-	ND [0.0331]	ND [0.0126]
98-82-8	8260D	Cumene	mg/kg	5.6	-	ND [0.0331]	ND [0.0126]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-	ND [0.00665] E	ND [0.00252]
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-	ND [0.0331] E	ND [0.0126]
106-93-4	8260D	EDB	mg/kg	0.00024	-	ND [0.00199] E	ND [0.000755] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-	ND [0.0331]	ND [0.0126]
75-69-4	8260D	Freon-11	mg/kg	41	-	ND [0.0665]	ND [0.0252]
-	8260D	Freon-113	mg/kg	-	-	ND [0.133]	ND [0.0505]
75-71-8	8260D	Freon-12	mg/kg	3.9	-	ND [0.133]	ND [0.0505]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.0265] E	ND [0.0101]
-	8260D	m,p-Xylene	mg/kg	-	-	ND [0.0665]	ND [0.0252]
78-93-3	8260D	MEK	mg/kg	15	4000	ND [0.332]	ND [0.126]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-	ND [0.133]	ND [0.0505]
1634-04-4	8260D	MTBE	mg/kg	0.4	-	ND [0.133]	ND [0.0505]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-	ND [0.0331]	ND [0.0126]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-	ND [0.0331]	ND [0.0126]
-	8260D	o-Xylene	mg/kg	-	-	ND [0.0331]	ND [0.0126]
127-18-4	8260D	PCE	mg/kg	0.19	14	ND [0.0166]	ND [0.0063]
99-87-6	8260D	p-Cymene	mg/kg	-	-	ND [0.106]	ND [0.0403]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-	ND [0.0331]	ND [0.0126]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-	ND [0.0331]	ND [0.0126]
100-42-5	8260D	Styrene	mg/kg	10	-	ND [0.0331]	ND [0.0126]
79-01-6	8260D	TCE	mg/kg	0.011	10	ND [0.0133] E	ND [0.00505]
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-	ND [0.0331]	ND [0.0126]
108-88-3	8260D	Toluene	mg/kg	6.7	-	ND [0.0331]	ND [0.0126]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-	ND [0.0166]	ND [0.0063]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-	ND [0.0331]	ND [0.0126]
75-01-4	8260D	VC	mg/kg	0.0008	4	ND [0.00106] E	ND [0.000403]
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-	ND [0.133]	ND [0.0505]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-	ND [0.0995]	ND [0.0378]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-	ND [0.000166]	ND [0.000063]
120-82-1	8270D	1,2,4-Trichlorobenzene	mg/kg	0.082	-	ND [0.284] E	-
95-50-1	8270D	1,2-Dichlorobenzene	mg/kg	2.4	-	ND [0.284]	-
541-73-1	8270D	1,3-Dichlorobenzene	mg/kg	2.3	-	ND [1.14]	-
106-46-7	8270D	1,4-Dichlorobenzene	mg/kg	0.037	150	ND [0.284] E	-
-	8270D	1-Chloronaphthalene	mg/kg	-	-	ND [0.284]	-
90-12-0	8270D	1-Methylnaphthalene	mg/kg	0.41	-	ND [0.284]	-
95-95-4	8270D	2,4,5-Trichlorophenol	mg/kg	28	8000	ND [0.284]	-
88-06-2	8270D	2,4,6-Trichlorophenol	mg/kg	0.092	40	ND [1.14] E	-
120-83-2	8270D	2,4-Dichlorophenol	mg/kg	0.21	-	ND [0.284] E	-
105-67-9	8270D	2,4-Dimethylphenol	mg/kg	3.2	-	ND [0.57]	-
51-28-5	8270D	2,4-Dinitrophenol	mg/kg	0.34	-	ND [5.7] E	-
121-14-2	8270D	2,4-DNT	mg/kg	0.024	2.6	ND [0.284] E	-
-	8270D	2,6-Dichlorophenol	mg/kg	-	-	ND [0.284]	-
606-20-2	8270D	2,6-DNT	mg/kg	0.005	-	ND [0.284] E	-
91-58-7	8270D	2-Chloronaphthalene	mg/kg	26	-	ND [0.284]	-
95-57-8	8270D	2-Chlorophenol	mg/kg	0.71	-	ND [0.284]	-
91-57-6	8270D	2-Methylnaphthalene	mg/kg	1.3	-	ND [0.284]	-
95-48-7	8270D	2-Methylphenol	mg/kg	6.2	4000	ND [0.284]	-
88-74-4	8270D	2-Nitroaniline	mg/kg	630	-	ND [0.284]	-
88-75-5	8270D	2-Nitrophenol	mg/kg	-	-	ND [0.284]	-
91-94-1	8270D	3,3'-Dichlorobenzidine	mg/kg	0.056	-	ND [1.14] E	-
99-09-2	8270D	3-Nitroaniline	mg/kg	-	-	ND [0.57]	-
534-52-1	8270D	4,6-Dinitro-2-methylphenol	mg/kg	5.1	-	ND [2.27]	-
101-55-3	8270D	4-Bromophenyl Phenyl Ether	mg/kg	-	-	ND [0.284]	-
59-50-7	8270D	4-Chloro-3-Methylphenol	mg/kg	6300	-	ND [0.284]	-
106-47-8	8270D	4-Chloroaniline	mg/kg	0.015	-	ND [1.14] E	-
7005-72-3	8270D	4-Chlorophenyl Phenyl Ether	mg/kg	-	-	ND [0.284]	-
100-01-6	8270D	4-Nitroaniline	mg/kg	27	-	ND [3.42]	-
-	8270D	4-Nitrophenol	mg/kg	-	-	ND [2.27]	-
83-32-9	8270D	Acenaphthene	mg/kg	37	-	ND [0.284]	-
208-96-8	8270D	Acenaphthylene	mg/kg	18	-	ND [0.284]	-
-	8270D	Aniline	mg/kg	-	-	ND [4.55]	-
120-12-7	8270D	Anthracene	mg/kg	390	-	ND [0.284]	-
-	8270D	Azobenzene	mg/kg	-	-	ND [0.284]	-
56-55-3	8270D	Benzo(a)anthracene	mg/kg	0.7	-	ND [0.284]	-
50-32-8	8270D	Benzo(a)pyrene	mg/kg	1.5	-	ND [0.284]	-
205-99-2	8270D	Benzo(b)fluoranthene	mg/kg	15	-	ND [0.284]	-
191-24-2	8270D	Benzo(g,h,i)perylene	mg/kg	2300	-	ND [0.284]	-
207-08-9	8270D	Benzo(k)fluoranthene	mg/kg	150	-	ND [0.284]	-
65-85-0	8270D	Benzoic Acid	mg/kg	200	-	ND [1.71]	-
100-51-6	8270D	Benzyl Alcohol	mg/kg	5.7	-	ND [0.284]	-
85-68-7	8270D	Benzyl Butyl Phthalate	mg/kg	16	-	ND [0.284]	-
111-91-1	8270D	bis(2-Chlorethoxy)methane	mg/kg	190	-	ND [2.27]	-
-	8270D	bis(2-Chloroethyl) Ether	mg/kg	-	-	ND [0.284]	-
108-60-1	8270D	bis(2-Chloroisopropyl) Ether	mg/kg	3100	-	ND [0.284]	-
117-81-7	8270D	bis(2-Ethylhexyl)phthalate	mg/kg	88	-	0.295 [0.284] J,B	-
-	8270D	Carbazole	mg/kg	-	-	ND [0.284]	-
218-01-9	8270D	Chrysene	mg/kg	600	-	ND [0.284]	-
53-70-3	8270D	Dibenzo(a,h)anthracene	mg/kg	1.5	-	ND [0.284]	-
132-64-9	8270D	Dibenzofuran	mg/kg	0.97	-	ND [0.284]	-
84-74-2	8270D	Dibutyl Phthalate	mg/kg	16	-	0.215 [0.284] J,B	-
84-66-2	8270D	Diethyl Phthalate	mg/kg	60	-	ND [0.284]	-
131-11-3	8270D	Dimethyl Phthalate	mg/kg	48	-	ND [0.284]	-
117-84-0	8270D	Di-n-octyl Phthalate	mg/kg	370	-	ND [0.57]	-
206-44-0	8270D	Fluoranthene	mg/kg	590	-	ND [0.284]	-
86-73-7	8270D	Fluorene	mg/kg	36	-	ND [0.284]	-
118-74-1	8270D	Hexachlorobenzene	mg/kg	0.0082	2.6	ND [0.284] E	-
87-68-3	8270D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.284] E	-
77-47-4	8270D	Hexachlorocyclopentadiene	mg/kg	0.0093	-	ND [0.795] E	-
67-72-1	8270D	Hexachloroethane	mg/kg	0.018	60	ND [0.284] E	-
193-39-5	8270D	Indeno(1,2,3-cd)pyrene	mg/kg	15	-	ND [0.284]	-
78-59-1	8270D	Isophorone	mg/kg	2.7	-	ND [0.284]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
-	8270D	m,p-Cresol	mg/kg	-	-	ND [1.14]	-
91-20-3	8270D	Naphthalene	mg/kg	0.038	-	ND [0.284] E	-
98-95-3	8270D	Nitrobenzene	mg/kg	0.0079	40	ND [0.284] E	-
62-75-9	8270D	n-Nitrosodimethylamine	mg/kg	0.0000033	-	ND [0.284] E	-
621-64-7	8270D	n-Nitrosodi-n-propylamine	mg/kg	0.00068	-	ND [0.284] E	-
86-30-6	8270D	n-Nitrosodiphenylamine	mg/kg	4.6	-	ND [0.284]	-
87-86-5	8270D	Pentachlorophenol	mg/kg	0.0043	2000	ND [4.55] E	-
85-01-8	8270D	Phenanthrene	mg/kg	39	-	ND [0.284]	-
108-95-2	8270D	Phenol	mg/kg	29	-	ND [0.284]	-
129-00-0	8270D	Pyrene	mg/kg	87	-	ND [0.284]	-
757124-72-4	EPA 537M BY ID	4:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
27619-97-2	EPA 537M BY ID	6:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
39108-34-4	EPA 537M BY ID	8:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
2991-50-6	EPA 537M BY ID	EtFOSAA	mg/kg	-	-	ND [0.0012]	-
2355-31-9	EPA 537M BY ID	MeFOSAA	mg/kg	-	-	ND [0.0012]	-
335-77-3	EPA 537M BY ID	Perfluorodecanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
68259-12-1	EPA 537M BY ID	Perfluorononanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
2706-91-4	EPA 537M BY ID	Perfluoropentanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
2706-90-3	EPA 537M BY ID	Perfluoropentanoic acid	mg/kg	-	-	ND [0.00059]	-
376-06-7	EPA 537M BY ID	Perfluorotetradecanoic acid	mg/kg	-	-	ND [0.00059]	-
72629-94-8	EPA 537M BY ID	Perfluorotridecanoic acid	mg/kg	-	-	ND [0.00059]	-
375-22-4	EPA 537M BY ID	PFBA	mg/kg	-	-	ND [0.00059]	-
375-73-5	EPA 537M BY ID	PFBS	mg/kg	-	-	ND [0.00059]	-
335-76-2	EPA 537M BY ID	PFDA	mg/kg	-	-	ND [0.00059]	-
307-55-1	EPA 537M BY ID	PFDoA	mg/kg	-	-	ND [0.00059]	-
375-85-9	EPA 537M BY ID	PFHpA	mg/kg	-	-	ND [0.00059]	-
375-92-8	EPA 537M BY ID	PFHPS	mg/kg	-	-	ND [0.00059]	-
307-24-4	EPA 537M BY ID	PFHxA	mg/kg	-	-	ND [0.00059]	-
355-46-4	EPA 537M BY ID	PFHxS	mg/kg	-	-	ND [0.00059]	-
375-95-1	EPA 537M BY ID	PFNA	mg/kg	-	-	ND [0.00059]	-
335-67-1	EPA 537M BY ID	PFOA	mg/kg	0.0017	-	ND [0.00059]	-
1763-23-1	EPA 537M BY ID	PFOS	mg/kg	0.003	-	ND [0.00059]	-
754-91-6	EPA 537M BY ID	PFOSA	mg/kg	-	-	ND [0.00059]	-
2058-94-8	EPA 537M BY ID	PFUnA	mg/kg	-	-	ND [0.00059]	-

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

Bold = The result exceeds RCRA 20 Times TCLP.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1225222
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	9/28/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: Samples were not transferred to another laboratory.

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: AK102, AK103, SW8270SIM, SW6020
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 4.3°C
Anchorage - Cooler 1: 0.1°C; Cooler 2: 3.6°C
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: Click or tap here to enter text.

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: No discrepancies were noted on the cooler receipt form.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: Soil samples were not submitted with this project.

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: The data quality and usability were not affected.

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: SW8270SIM - 1-Methylnaphthalene, 2-Methylnaphthalene, Fluoranthene and Phenanthrene were detected in the MB less than the LOQ.

iii. If above LoQ or RL, what samples are affected?
Comments: 22MAH-TW02-GW, 22MAH-TW02-GWA, 22MAH-TW03-GW, 22MAH-TW04-GW, 22MAH-TW6b-GW and 22MAH-MW4-GW.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: Affected sample results were qualified B, high bias.

v. Data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: All affected sample results were significantly less than the PSL. The data quality was minimally affected.

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: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: SW8270SIM – Surrogates, Fluoranthene-d10 and 2-Methylnaphthalene-d10 were recovered low in sample 22MAH-TW01-GW.

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: The affected sample result was qualified JS-, biased low.

iv. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: SW8270SIM – All affected sample results were non-detect with LODs significantly less than the PSL. Data quality was minimally affected.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☐ No ☐ N/A ☒
Comments: Volatiles were not submitted with this SDG.

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: A trip blank was not submitted with this SDG.

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: Data quality or usability were not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: One field duplicate was submitted with six primary samples. Primary/Field Duplicate: 22MAH-TW02-GW/22MAH-TW02-GWA.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐
Comments: RPDs were only evaluated if at least one result in the duplicate pair was greater than the LOD. If one result was non-detect, the LOD value was used to calculate the RPD.

All primary/field duplicate RPDs were in control.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1225223
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	9/29/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: Samples were not transferred to another laboratory.

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: AK101, SW8260, SW8260SIM
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 4.3°C
Anchorage - Cooler 1: 0.1°C; Cooler 2: 3.6°C
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: Click or tap here to enter text.

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: No discrepancies were noted on the cooler receipt form.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: Soil samples were not submitted with this project.

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: SW8260 – The LOD was greater than the project screening level for 1,2,3-TCP in samples 22MAH-TB01W, 22MAH-MW4-GW, 22MAH-TW04-GW, 22MAH-TW03-GW, 22MAH-TW02-GW, 22MAH-TW02-GWA, 22MAH-TW01-GW and 22MAH-TW6b-GW.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality was affected in that results exceeding the PSL may be reported as non-detect (ND) due to laboratory method limitations. 1,2,3-TCP was not a contaminant of concern at this site. ND results with LODs greater than the PSL are qualified E.

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: No samples were affected.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

v. Data quality or usability affected?
Yes ☐ No ☐ N/A ☒

Comments: Data quality or usability were not affected.

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: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: AK101 – Surrogate, 4-Bromofluorobenzene was recovered high in sample 22MAH-TW01-GW.
SW8260 – Surrogate, 4-Bromofluorobenzene was recovered high in sample 22MAH-TW01-GW.

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: Detected sample results were qualified JS+, biased high.

iv. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: All affected results were either significantly less than the PSL or exceeded the PSL by a factor of two or more. Data quality or usability were minimally affected.

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: Data quality or usability were not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: One field duplicate was submitted with six primary samples.
Primary/Field Duplicate: 22MAH-TW02-GW/22MAH-TW02-GWA.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐
Comments: RPDs were only evaluated if at least one result in the duplicate pair was greater than the LOD. If one result was non-detect, the LOD value was used to calculate the RPD.

All primary/field duplicate RPDs were in control.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1225240
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	9/26/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: Samples were not transferred to another laboratory.

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: AK101, SW8260, SW8260SIM, AK102/103, SW8270SIM, SW6020.
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 3.0°C
Anchorage – 5.0°C
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: Click or tap here to enter text.

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: No discrepancies were noted on the cooler receipt form.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: The following analytes had LODs greater than the project screening level (PSL):
SW8260 - 1,1,1,2-Tetrachloroethane, 1,2,3-TCP, 1,2-Dibromo-3-chloropropane, EDB, 2-Hexanone, Bromomethane, Chloroform, Dibromochloromethane, Dibromomethane, Hexachlorobutadiene, TCE, VC, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2,3-Trichlorobenzene, 1,4-Dichlorobenzene, Naphthalene and trans-1,3-Dichloropropene.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality was affected in that results exceeding the PSL may be reported as non-detect (ND) due to laboratory method limitations. ND results with LODs greater than the PSL are qualified E.

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: All detected MB results were less than the LOQ.

iii. If above LoQ or RL, what samples are affected?
Comments: AK101 – GRO was detected in several method blanks affecting samples 22MAH-SB8b-SO6-8, 22MAH-SB8b-SO10-10.5, 22MAH-SB8b-SO10-10.5A, 22MAH-TB01S, 22MAH-SB12-SO10.5.11, 22MAH-SB12-SO2-4, 22MAH-SB13-SO10-10.5, 22MAH-SB13-SO8-10, 22MAH-SB6b-SO9.5-10, 22MAH-SB6b-SO2-4, 22MAH-SB7b-SO10-10.5, 22MAH-SB7b-SO10-10.5A, 22MAH-SB7b-SO6-8, 22MAH-SB3b-

SO9.5.10 and 22MAH-SB3b-SO2-4.
AK102 - DRO was detected in the method blank affecting samples 22MAH-SB12-SO2-4, 22MAH-SB13-SO10-10.5, 22MAH-SB13-SO8-10, 22MAH-SB6b-SO9.5-10, 22MAH-SB6b-SO2-4, 22MAH-SB7b-SO10-10.5, 22MAH-SB7b-SO10-10.5A and 22MAH-SB7b-SO6-8.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: All affected samples were qualified B, biased high.

v. Data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: All affected results were significantly less than the PSL. Data quality or usability were minimally affected.

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: SW8260 - Freon-11, 1,1-Dichloropropene, Chloroform and Benzene were recovered high in the LCS.

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: All associated results were ND except Freon-11. Freon-11 was detected in sample 22MAH-SB8b-SO10-10.5.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: The affected result was qualified JS+, biased high.

vii. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: The affected sample result was significantly less than the PSL. Data quality or usability were minimally affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?

Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: Click or tap here to enter text.

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: All surrogates were in control.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: AK101- GRO was detected in the trip blank affecting samples 22MAH-SB6b-SO9.5-10, 22MAH-SB6b-SO2-4, 22MAH-SB13-SO10-10.5, 22MAH-SB13-SO8-10, 22MAH-SB7b-SO10-10.5, 22MAH-SB7b-SO10-10.5A, 22MAH-SB7b-SO6-8, 22MAH-SB12-SO10.5-11, 22MAH-SB12-SO2-4, 22MAH-SB3b-SO9.5-10, 22MAH-SB3b-SO2-4, 22MAH-SB8b-SO6-8, 22MAH-SB8b-SO10-10.5 and 22MAH-SB8b-SO10-10.5A. All affected results were qualified B, biased high.

iv. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: All affected results were significantly less than the PSL. Data quality or usability were minimally affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Two field duplicate pairs were submitted with twelve primary samples. Primary/Field Duplicate: 22MAH-SB7b-SO10-10.5/22MAH-SB7b-SO10-10.5A and 22MAH-SB8b-SO10-10.5/22MAH-SB8b-SO10-10.5A

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐
Comments: RPDs were only evaluated if at least one result in the duplicate pair was greater than the LOD. If one result was non-detect, the LOD value was used to calculate the RPD.

All primary/field duplicate RPDs were in control.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1225314
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	9/28/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: Samples were not transferred to another laboratory.

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: AK101, SW8260, SW8260SIM
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 5.6°C
Anchorage – A temperature was not noted in the sample receipt form.
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: Click or tap here to enter text.

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: Only 3 trip blank vials were received. The CoC stated there were 9 vials.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: No containers were noted as received at non-compliant temperature. The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: Soil samples were not submitted with this SDG.

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: SW8260 – The LOD was greater than the project screening level for 1,2,3-TCP in samples 22MAH-MW12-GW, 22MAH-MW13-GW, 22MAH-MW3b-GW, 22MAH-MW7b-GW, 22MAH-MW8b-GW, 22MAH-MW8b-GWA and 22MAH-TB02W.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality was affected in that results exceeding the PSL may be reported as non-detect (ND) due to laboratory method limitations. 1,2,3-TCP was not a contaminant of concern at this site. ND results with LODs greater than the PSL are qualified E.

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: SW8270SIM - 1-Methylnaphthalene and 2-Methylnaphthalene were detected in the MB less than the LOQ.
AK103 – RRO was detected in the MB less than the LOQ.

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

Comments: SW8270SIM - 22MAH-MW12-GW, 22MAH-MW13-GW, 22MAH-MW3b-GW, 22MAH-MW7b-GW, 22MAH-MW8b-GW and 22MAH-MW8b-GWA.
AK101 - 22MAH-MW8b-GWA, 22MAH-MW8b-GW, 22MAH-MW3b-GW and 22MAH-MW12-GW.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: All affected samples were qualified B, biased high.

v. Data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: SW8270SIM – All affected results were significantly less than the PSL. Data quality or usability were minimally affected.
AK103 – All affected RRO results were slightly less than the PSL. Data quality or usability were minimally affected.

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: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒

Comments: Data quality or usability were not affected.

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: Click or tap here to enter text.

   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: All surrogates were in control.

   iv. Is the data quality or usability affected?
   Yes ☐ No ☐ N/A ☒
   Comments: Data quality or usability were not affected.

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: Data quality or usability were not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: One field duplicate was submitted with five primary samples. Primary/Field Duplicate: 22MAH-MW8b-GW/22MAH-MW8b-GWA.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐
Comments: RPDs were only evaluated if at least one result in the duplicate pair was greater than the LOD. If one result was non-detect, the LOD value was used to calculate the RPD.

The following primary/field duplicate (22MAH-MW8b-GW/22MAH-MW8b-GWA) had RPDs greater than 30%:
SW8270SIM -1-Methylnaphthalene (31%) and 2-Methylnaphthalene (42%).
AK102 - DRO (38%).
SW6020 – Lead (34%).

All affected samples were qualified JD, unknown bias.

iv. Is the data quality or usability affected? (Explain)
Yes ☒ No ☐ N/A ☐
Comments: All affected results were less than the PSL. Data quality or usability were minimally affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐

Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1226337
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	11/28/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: PFAS samples were transferred to SGS of Orlando, FL.

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: AK101, SW8260, SW8260SIM, AK102/103, SW8270SIM, SW6020 and EPA 537.1
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 1.7°C
Anchorage – Temperature was not recorded on the sample receipt form.;
Orlando – 4.8°C
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: Click or tap here to enter text.

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: No discrepancies were documented.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: The Anchorage sample receipt form did not identify any containers out of temperature. The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: Soil samples were not submitted with this SDG.

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: SW8260 – The LOD was greater than the project screening level for 1,2,3-TCP in samples 22MAH-TB03W, 22MAH-DR01-WW, 22MAH-DR02-WW, 22MAH-DR03-WW and 22MAH-DR04-WW.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality was affected in that results exceeding the PSL may be reported as non-detect (ND) due to laboratory method limitations. 1,2,3-TCP was not a contaminant of concern at this site. ND results with LODs greater than the PSL are qualified E.

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: SW6020 - Lead was detected in the MB greater than the LOQ.

iii. If above LoQ or RL, what samples are affected?
Comments: SW6020 - 22MAH-DR01-WW, 22MAH-DR02-WW, 22MAH-DR03-WW and 22MAH-DR04-WW.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: All affected samples were qualified B, biased high.

v. Data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: SW6020 – All affected results were significantly less than the PSL. Data quality or usability were minimally affected.

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: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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 and IDA recoveries were only evaluated if the dilution factor (DF) was less than 5.

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: All surrogates and IDAs with DF less than 5 were in control.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: SW8260 – Methylene chloride was detected greater than the LOQ in trip blank 22MAH-TB03W.

iii. If above LoQ or RL, what samples are affected?
Comments: All associated sample results were ND.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability were not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☐ No ☐ N/A ☒
Comments: Samples were collected for waste characterization. A field duplicate was not collected.

ii. Was the duplicate submitted blind to lab?

Yes ☐ No ☐ N/A ☒
Comments: A field duplicate was not collected.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☐ N/A ☒
Comments: A field duplicate was not collected

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: A field duplicate was not collected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Kari Hagen	**CS Site Name:**	2022 ADOT MarkAir Hangar	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	100.26.043	**Lab Report No.:**	1226513
Consulting Firm:	Jacobs Engineering	**Hazard ID No.:**	24293	**Lab Report Date:**	11/28/2022

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: Samples were submitted to SGS of Anchorage, AK.

   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: PFAS samples were transferred to SGS of Orlando, FL.

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: AK101, SW8260, SW8260SIM, AK102/103, SW8270SIM, SW6020 and EPA 537.1.
   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): Click or tap here to enter text.

Sample temperature(s): Fairbanks – 5.9°C; Anchorage – 2.3°C; Orlando – 2.6°C
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: Click or tap here to enter text.

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: No discrepancies were noted on the cooler receipt form.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: The data quality and usability were not affected.

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: QC failures are discussed in the relevant sections of this checklist.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: Corrective actions were not necessary.

d. What is the effect on data quality/usability according to the case narrative?
Comments: The data quality and usability were not affected.

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.

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: The following analytes had LODs greater than the project screening level (PSL):
SW8260 - 1,2,3-TCP, 1,2-Dibromo-3-chloropropane, EDB, 1,1,1,2-Tetrachloroethane, 2-Hexanone, Bromomethane, Chloroform, Dibromochloromethane, Dibromomethane, Hexachlorobutadiene, TCE and VC.
SW8270 - 1,2,4-Trichlorobenzene, 1,4-Dichlorobenzene, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dinitrophenol, 2,4-DNT, 2,6-DNT, 3,3'-Dichlorobenzidine, 4-Chloroaniline, Hexachlorobenzene, Hexachlorocyclopentadiene, Hexachloroethane, Naphthalene, Nitrobenzene, n-Nitrosodimethylamine, n-Nitrosodi-n-propylamine and Pentachlorophenol.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality was affected in that results exceeding the PSL may be reported as non-detect (ND) due to sample dilutions or laboratory method limitations. ND results with LODs greater than the PSL are qualified E.

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: AK101 – GRO was detected in method blank affecting samples 22MAH-DR-SO and Trip Blank.
SW8270 - bis(2-Ethylhexyl)phthalate and Dibutyl Phthalate were detected

in the method blank affecting sample 22MAH-DR-SO.
SW6020 – Lead was detected in the method blank. The associated sample result was greater than ten times the blank concentration. The sample was not affected.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: All affected samples were qualified B, biased high.

v. Data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: All affected results were significantly less than the PSL. Data quality or usability were minimally affected.

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: All LCS/LCSD recoveries were in control.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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.

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: No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No samples were affected.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

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: Click or tap here to enter text.

   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: All surrogates were in control.

   iv. Is the data quality or usability affected?
   Yes ☐ No ☐ N/A ☒
   Comments: Data quality or usability were not affected.

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: AK101- GRO was detected in the trip blank affecting sample 22MAH-DR-SO. The affected result was qualified B, biased high.

   iv. Is the data quality or usability affected?
   Yes ☒ No ☐ N/A ☐
   Comments: The affected result was significantly less than the PSL. Data quality or usability were minimally affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☐ No ☒ N/A ☐
Comments: Sample was collected for waste characterization. A field duplicate was not collected.

ii. Was the duplicate submitted blind to lab?
Yes ☐ No ☐ N/A ☒
Comments: A field duplicate was not collected.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☐ N/A ☒
Comments: A field duplicate was not collected.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability were not affected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: An equipment blank was not required for this project.

Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

ii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iii. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not submitted with this project.

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

a. Are they defined and appropriate?

Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

APPENDIX D
CSM and Ecoscoping Forms

Appendix A - Human Health Conceptual Site Model
Scoping Form and Standardized Graphic

Site Name:

File Number:

Completed by:

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☐ Other:

Release Mechanisms *(check potential release mechanisms at the site)*

- ☐ Spills
- ☐ Leaks
- ☐ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☐ Surface soil (0-2 feet bgs*)
- ☐ Subsurface soil (>2 feet bgs)
- ☐ Air
- ☐ Sediment
- ☐ Groundwater
- ☐ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☐ Residents (adult or child)
- ☐ Commercial or industrial worker
- ☐ Construction worker
- ☐ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☐ Site visitor
- ☐ Trespasser
- ☐ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☐

If the box is checked, label this pathway complete:

Comments:

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☐

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☐

If both boxes are checked, label this pathway complete:

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☐

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the ground-water is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☐

If both boxes are checked, label this pathway complete:

Comments:

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☐

If both boxes are checked, label this pathway complete: ☐

Comments:

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: ☐

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☐

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☐

If both boxes are checked, label this pathway complete: ☐

Comments:

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☐

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☐

If both boxes are checked, label this pathway complete:

Comments:

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: MarkAir - FIA Main Facility (Hanger)
File Number:100.26.043, Hazard ID: 24293

Completed By: Alec Jemison - Jacobs Engineering
Date Completed: 1/27/2022, *revised 1/26/2024 for RTC*

***Instructions*: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.**

(1)
Check the media that could be directly affected by the release.

(2)
For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.

Media / **Transport Mechanisms**

- ☐ **Surface Soil (0-2 ft bgs)**
  - Direct release to surface soil — *check soil*
  - ☐ *Migration to subsurface* — *check soil*
  - ☐ *Migration to groundwater* — *check groundwater*
  - ☐ *Volatilization* — *check air*
  - ☐ *Runoff or erosion* — *check surface water*
  - ☐ *Uptake by plants or animals* — *check biota*
  - ☐ *Other (list):*
- ☑ **Subsurface Soil (2-15 ft bgs)**
  - Direct release to subsurface soil — *check soil*
  - ☐ *Migration to groundwater* — *check groundwater*
  - ☐ *Volatilization* — *check air*
  - ☐ *Uptake by plants or animals* — *check biota*
  - ☐ *Other (list):*
- ☑ **Ground-water**
  - Direct release to groundwater — *check groundwater*
  - ☑ *Volatilization* — *check air*
  - ☐ *Flow to surface water body* — *check surface water*
  - ☐ *Flow to sediment* — *check sediment*
  - ☐ *Uptake by plants or animals* — *check biota*
  - ☐ *Other (list):*
- ☐ **Surface Water**
  - Direct release to surface water — *check surface water*
  - ☐ *Volatilization* — *check air*
  - ☐ *Sedimentation* — *check sediment*
  - ☐ *Uptake by plants or animals* — *check biota*
  - ☐ *Other (list):*
- ☐ **Sediment**
  - Direct release to sediment — *check sediment*
  - ☐ *Resuspension, runoff, or erosion* — *check surface water*
  - ☐ *Uptake by plants or animals* — *check biota*
  - ☐ *Other (list):*

(3)
Check all exposure media identified in (2).

(4)
*Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5)
Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.

Current & Future Receptors

Exposure Media	Exposure Pathway/Route	Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ soil	☑ Incidental Soil Ingestion				F			
	☑ Dermal Absorption of Contaminants from Soil				F			
	☑ Inhalation of Fugitive Dust				F			
☑ groundwater	☐ Ingestion of Groundwater							
	☑ Dermal Absorption of Contaminants in Groundwater		F	F	F			F
	☐ Inhalation of Volatile Compounds in Tap Water							
☑ air	☐ Inhalation of Outdoor Air							
	☑ Inhalation of Indoor Air	F						
	☐ Inhalation of Fugitive Dust							
☐ surface water	☐ Ingestion of Surface Water							
	☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Inhalation of Volatile Compounds in Tap Water							
☐ sediment	☐ Direct Contact with Sediment							
☐ biota	☐ Ingestion of Wild or Farmed Foods							

Revised, 10/01/2010

MarkAir Hangar Site Characterization Report
Appendix D
Ecoscoping Form

Site Name: MarkAir Hangar
Completed by: Jennifer Robinson
Date: 6 February 2023

Instructions: Follow the italicized instructions in each section below. "Off-ramps," where the evaluation ends before completing all of the sections, can be taken when indicated by the instructions. Comment boxes should be used to help support your answers.

1. Direct Visual Impacts and Acute Toxicity

Are direct impacts that may result from the site contaminants evident, or is acute toxicity from high contaminant concentrations suspected? C*heck the appropriate box.*

☐ Yes – D*escribe observations below and evaluate all of the remaining sections <u>without taking any off-ramps</u>.*
☒ No – *Go to next section.*

Comments:

Contaminant exceedances of one-tenth ADEC human health criteria occurred only in groundwater. Therefore, direct visual impacts and acute toxicity is not anticipated.

2. Terrestrial and Aquatic Exposure Routes

Check each terrestrial and aquatic route that could occur at the site.

<u>Terrestrial Exposure Routes</u>

☐ Exposure to water-borne contaminants as a result of wading or swimming in contaminated waters or ingesting contaminated water.
☐ Contaminant uptake in terrestrial plants whose roots are in contact with contaminated surface water.
☐ Contaminant migration via saturated or unsaturated groundwater zones and discharge at upland "seep" locations (not associated with a wetland or waterbody).
☐ Contaminant uptake by terrestrial plants whose roots are in contact with soil moisture or groundwater present within the root zone (generally no more than 4 feet below ground surface.
☐ Particulates deposited on plants directly or from rain splash.
☐ Incidental ingestion and/or exposure while animals grub for food, burrow (up to 2 feet for small animals or 6 feet for large animals), or groom.

☐ Inhalation of fugitive dust or vapors disturbed by foraging or burrowing activities.

☒ Bioaccumulatives (other than PAHs, which bioaccumulate more readily in aquatic environments) taken up by soil invertebrates, which are in turn eaten by higher food chain organisms (see the *Policy Guidance on Developing Conceptual Site Models*).

☐ Other site-specific exposure pathways.

Aquatic Exposure Routes

☐ Contaminated surface runoff migration to water bodies through swales, drainage ditches, or overland flow.

☐ Aquatic receptors exposed through osmotic exchange, respiration, or ventilation of surface waters.

☐ Contaminant migration via saturated or unsaturated groundwater zones and discharge at "seep" locations along banks or directly to surface water.

☐ Deposition into sediments from upwelling of contaminated groundwater.

☐ Aquatic receptors may be exposed directly to contaminated sediments through foraging or burrowing, or indirectly exposed due to osmotic exchange, respiration, or ventilation of sediment pore water.

☐ Aquatic plants rooted in contaminated sediments.

☐ Bioaccumulatives (see the *Policy Guidance on Developing Conceptual Site Models*) taken up by sediment invertebrates, which are in turn eaten by higher food chain organisms.

☐ Other site-specific exposure pathways.

If any of the above boxes are checked, go on to the next section. If none are checked, end the evaluation and check the box below.

☐ OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

No contaminants in soil between the surface and 6 feet below ground surface were detected at concentrations greater than the ADEC Table B1 or B2 soil cleanup levels in 18 AAC 75. However, lead is a bioaccumulative contaminant that was detected below ADEC cleanup levels in soil between 2 and 10 feet below ground surface. Therefore, uptake of lead by soil invertebrates is possible, Since grasses typically have a shallow root system, uptake by grasses is considered unlikely.

Aquatic habitat does not exist at the site.

3. Habitat

Check all that may apply. See Ecoscoping Guidance for additional help.

☐ Habitat that could be affected by the contamination supports valued species (i.e., species that are regulated, used for subsistence, have ceremonial importance, have commercial value, or provide recreational opportunity).

☐ Critical habitat or anadromous stream in an area that could be affected by the contamination.

☐ Habitat that is important to the region that could be affected by the contamination.

☐ Contamination is in a park, preserve, or wildlife refuge.

If any of the above boxes are checked, go on to the next scoping factor. If none are checked, end the evaluation and check the box below.

■ OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

The MAH site is highly developed and mostly comprised of asphalt and gravel surfaces. MAH is not located within an ecologically sensitive area. No known endangered or threatened species are present or known to exist at the site or surrounding area.

4. Contaminant Quantity

Check all that may apply. See Ecoscoping Guidance for additional help.

☐ Endangered or threatened species are present.

☐ The aquatic environment is or could be affected.

☐ Non-petroleum contaminants may be present, or the total area of petroleum-contaminated surface soil exceeds one-half acre.

If any of the above boxes are checked, go on to the next scoping factor. If none are checked, end the evaluation and check the box below.

☐ OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

5. Toxicity Determination

Check all that apply.

☐ Bioaccumulative chemicals are present (see *Policy Guidance on Developing Conceptual Site Models*).

☐ Contaminants exceed benchmark levels (see the Ecological Benchmark Tool in RAIS, available at: http://rais.ornl.gov/tools/eco_search.php).

If either box is checked, complete a detailed Ecological Conceptual Site Model (see DEC's Policy Guidance on Developing Conceptual Site Models*) and submit it with the form to your DEC project manager.*

If neither box is checked, check the box below and submit this form to your DEC project manager.

☐ OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

APPENDIX E
Field Notes and Forms

ADOT FAI

ADOT-JØ7-7ØØ198-HØ4-ØØØ1

Hydrant Fuel System

Drainage Pond

Breaks fuel

Mark-Air

Rite in the Rain.

ALL-WEATHER

ENVIRONMENTAL

№ 550F

2019

2020

2021

2022

J. Robinson A. Jansen

G. Wade

T. Laitt

K. Sicard

ISBN 978-1-932149-50-0

34

Location FAI BFS Date 7/7/2022

Project / Client BFS GW mon summer '22

0735 G. Wade departed Jacobs office to get water. will hold POWER / tailgate safety mtg on site. Meet @ Badging office for vehicle passes

0750 Departed Jacobs office: K. Strad and A. Jemison.

0850 Begin set up at MW-5

0915 Started pumping, purged, stabilized Tubing @ 11.02'

0938 Sampled 22BFS-MW5-GW

0955 started packing and cleaning equipment

1010 Karri arrived w/ new well plug

1014 Dug out around well casing and placed cone on top of Well is located 8 paces NE and 5 paces NW of the Electrical boxes.

1050 Leaving BFS site

1130 Empty 5 gal buckets into waste drum

1300 Take more samples

5.5 gals of waste from BFS

25 gals of waste from MAW

Location FAI MAH Date 8/18/22

35

Project / Client MAH MW + TW Locate and Utility check

A. Jemison + R. Margitics

0800 Ricky + Alec meet @ office in Folds

0815 Arrive @ MAH (Events)

0830 meet w/ college utilities rep. discuss waters and sewer line locations. MW 86 is near hydrant and because it is a private line the College utilities people can't mark where it runs. We will check with May locates & GPR. MW 36 + 46 are near sewer line and water lines. Should be offset enough to avoid them.

0900 Continue marking boring locs.

0915 Call w/ Greg W. to discuss MW-13. We decide to move MW 13 directly north from plotted location as to avoid traffic zone.

0950 Finish marking locations + set up GPS

1000 Record all locations in gps.

1030 Start utility sweep of MW + TW sites

MW46 - Originally located between water + Sewer lines. Moved 15ft towards building to avoid threading needle between lines.

TW02 - located as planned. No utility issues.

Rite in the Rain

Location Everts Air / MAH Date 8/18/22

Project / Client MAH TW+MW Locates Cont

MW-8b: lots of conflict w/ water lines @ proposed location. Relocated to the North about 15'→20' in parking lot to avoid utilities. Underground electric also near proposed site

MW6b: No conflicts. Marked as proposed.
TW03: No Conflicts. Marked as proposed.
MW12: Close to sewer line in area. May need to move NE to clear line. Line is ABS.
MW13: Moved 15' NNW. Moved to avoid driveway area and high traffic zone.

8/18/22

Location DOT FAI MAH Date 8/24/22

Project / Client Dot FAI

Objective: Drill wells at Everts Air. Wx: Partly Cloudy 80-65°F

0815: Meet @ Everts w/ Geotek - see form
0830: Safety Meeting - See POWRA form
Back w/ everts maintenance - 907 590 8871
→ Gate 22 access. Mark - cargo mgr 803-231-7560
Plan for TW03 in morning due to traffic
0900 - Site walk. Found MW4 (prev. lost)
1000 - Checking MW4 water level & viability:
PID Air - Breathing zone = 0.0ppm
In well = 0.0ppm
WL = 10.4' BGL
TD = 20.8' BGL
1042: Set up on MW-6b waiting on driller to return from grabbing gear / supplies
1102 - Start drilling Macro core @ MW-6b. See SB log
1155 collect Sample 9.5'→10' bgs. gw saturated zone

22MAH-SB6b-SO 9.5-10

1218 collect Sample from 2 to 4 ft bgs in highest PID reading interval

22MAH-SB6b-SO-2-4 = 3.3 ppm

2:23 Finished well and cap. See well completion form. WL = 8.7 ft btoc

Rite in the Rain

Location FAI MAH / Everts Air Date 8/24/22

Project / Client MAH / FAI DOT

14:20 Drillers took lunch / departed site to grab more materials.

Well screen was set @ ~18-8 ft bgs.

Well finished with flush mount. in grout / concrete under plow line.

14 25 Received permission from Cargo mgr to drill well in busy area.

15:00 MOB to SB-13 / MW-13 once drillers came back.

15:30 Began drilling / cutting through asphalt asphalt ~6". See SB log.

PID: 0.5-2' 4.6 ppm
2-4' 4.7 ppm
4-6' 2.8 ppm
6-8' 1.4 ppm
8-10 11.1 ppm * sample

WL Saturated zone ~ 10 ft bgs

16:00 Collect 22MAH-SB13-SO-10-10.5 from 10 to 10.5 ft bgs saturated GW zone.

16:15 Collect 22MAH-SB13-SO-8-10 from 8 to 10 ft. bgs

Highest PID = 11.1 ppm

Location FAI MAH / Everts Date 8/24/22

Project / Client MAH / FAI / DOT

16:25 Drillers tried pushing casing but too difficult.

16:38 Drillers Grabbed larger tooling.

16:50 Drillers attempt to retrieve casing, and drill past it with larger tooling

17:15 No progress. Reassessed options.

17:20 Decided to abandon & plug well, and step over & drill tomorrow.

17:35 Plugged & patched hole. Packed up

17:50 Exited SIDA area through gate 21. Packed up

18 00 Departed Site.

18 05 IDW shed Low locked. Will stage drums tomorrow.

18:10 Departed airport

18:18 Arrive at office, unload samples to fridge.

18:30 Sit Rep & Call G Wade.

19:00 End of field day.

8.24.22

Location FAI MAH/Everts Date 8/25/22

Project / Client FAI MAH / DOT

PN: D3536200

Weather: Mostly sunny, 50-70F

PPE: Level D modified

Personnel: K. Sicard SL / SSHO Jacobs
A. Jemison Geologist Jacobs
L. Amskold Geo / SL / Jacobs
K. Johnson & L. Lives Samplers Jacobs
Geotek Drillers: S. Simes, Jordan

Everts Site Contacts: Ed Bell (Ground Safety)
Everts: Buck (maint. ops mgr)
Everts: Mark - Air Cargo mgr.
Everts staff on site but not involved with drilling, just access.

Stopping by site: Elisa Thomas (FAI DOT)

Objectives: Drill wells on site, sample soil, monitor VOCs with PID, sample GW.

Plan: start in high traffic plane area while planes are gone ~8:30

0700 Meet at office - calibrate PID, YSI, turbidimeter, gather supplies

0743 Turbidity Meter Cal.
Hach 2100p Turbidimeter S/N: 04040003554
Stabl Cal set Lot A2082
<0.1 NTU ✓ 20 NTU ✓ 100 NTU ✓ 800 NTU ✓

Location FAI MAH/Everts Date 8/25/22

Project / Client FAI MAH/DOT cont.

YSI Professional Series S/N: 13G100576
PH Lot # CC718747 6.99 ✓
Std Cond # CC22315 12660 µS/cm ✓
ORP 4341 238.2 mV ✓

0815 Depart office. Safety mtg - see PowR A form
0900 Set up @ TW04
0915 Begin drilling for TW04
Plan to set screen of temp well from 9 ft bgs to 12 ft 9" bgs to capture GW interface (~10 ft bgs)
0931 Finished Install of TW04
0936 Moved to MW-7b and set up
0944 Elisa Thomas (FAI/DOT) stopped by site.
0947 Began drilling at MW-7b
0958 E Thomas departed site.
10:19 K Johnson & L Lives escorted onto SIDA area, set up to sample at TW04.
See SB log for soil description.
Asphalt 0 to 0.8 ft bgs.
PID readings from MW 7b:
Highest interval = 6 to 8 ft bgs
PID = 6.9 ppm

Rite in the Rain

Location MAH FAI / Events Date 8/25/22

Project / Client FAI DOT MAH

10:48 Collect sample at GW interface GW ~10.5, saturated starting at 10' bgs

10:48 Collect 22MAH-SB76-SO-10-10.5 from 10 to 10.5 ft bgs

10:48 a Dup. Collect 22MAH-SB76-SOA-10-10.5 same interval duplicate

11:15 Collect 22MAH-SB76-SO-6-8 from 6 to 8 ft bgs.

Bottom of well at 18'4".

11:20 Drillers set well screen 18-8 ft bgs See well diagram for mw-76

11:35 Well mw-76 PVC set with sand, bentonite, gravel.

11:40 Drillers patched hole from TLW-04 after extracting metal screen.

11:45 *Post-note: GW sampling team K Johnson & LaLiberte sampled TW-04:

Sample time: 22MAH-TW04-GW

GW = 10.8 ft bgs.

Screen from 9ft to 12.75' bgs.

Location MAH FAI / Events Date 8/25/22

Project / Client FAI DOT MAH

Temp well TW-04 cleared ~~started~~ up quickly reportedly. See sheet (KS)

11:50 *Post Note:

GW team sampled mw-4 (in parking lot) first thing in the morning.

Sample time: 09:50 am

09:50 22MAH-MW4-GW

See sampling form for details

Reportedly stabilized quickly.

11:55 Packed up gear.

Drillers placed well casing / asphalt.

Well casing complete. WLm wasn't working. will meas. later.

12:35 Departed SVDA area.

12:45 Lunch on site.

13:15 Organized GW samplers for development at mw-66.

13:35 They ran to TT for surge block. Drillers mobed to mw-13 in cargo area to redrill

14:15 GW team returned for devel.

14:28 Started development at mw66

Rite in the Rain

Location MAH FAI, Fairbanks (Everts Air Cargo) Date 8/25/22

Project / Client FAI DOT

14:30 Developed with waterra and surge block for 2-3 mins per 2' interval plus another 20 mins of surging. Before switching to peri pump. See devel. sheet.

15:05 Problems with drilling - met refusal again. Decided to return to MW-13 tomorrow with the auger. Refusal w/ 4/5 @ 4' BGS

15:15 Drillers packed up, mob. out of SIDA

15:35 Drillers set up @ TW03

15:40 Drillers Decon. the TW ~~slotted~~ screens

15:45 Start drilling through asphalt at TW03

16:00 Finish Install @ TW03

16:10 Begin drilling at MW-13/SB-12

16:15 Thru asphalt starting macrocore. See SB log for details. GW saturated zone 10.5 to 11 ft bgs

16:55 Collect 22MAH-SB12-SO-10.5-11 from 10.5 to 11 ft bgs

17:00 Highest PID reading from 2 to 4 ft bgs at 2.0 ppm

17:00 Collect 22MAH-SB12-SO-2-4 from 2 to 4 ft bgs.

Location MAH FAI/Everts Date 8/25/22

Project / Client FAI DOT

17:05 Drillers continued with 45 tooling

* Post-note:

16:40 GW sampling team: sampled TW03: 22MAH-TW03-GW

17:25 Post-note:

Development MW-6b went very quickly. Min. purge was ~33 gals. Stabilized before hitting that. See dev. form

17:30 Well developed (MW-6b). Loaded IDW soil and water

18:10 A Jemison reported site, ~~dropped~~ (KJ) staged IDW soil & water at Env. cold storage bldg.

IDW water = approx. 40 gals

IDW soil = approx gals into drum - field.

(Post-note) 17:35 K. Johnson & L. Livers departed site to office & unloaded samples to fridge

18:20 Drillers set well - see form.

18:35 Drillers extracted TW03, patched hole.

19:30 Drillers finished well vault install

19:35 All personnel departed site

End of field day

Rite in the Rain

Location FAI MATT / Evers Date 8/26/28

Project / Client FAI DOT

PN D3536200

Weather: Partly cloudy, no wind, 50-65°F

PPE: Level D mod.

Personnel: Jacobs { K. Sicard, G. Wade, K. Johnson, L. Livers, L. Armstrold

Geotek: S. Simms J. Daughtry

Evers Air personnel as they stop by

Objectives: Drill TW01 & TW02 & sample

Redrill (auger) MW-13 & set well

Drill & install SB/MW-8b, SB/MW-3b

Develop MW-7b, sample MW-6b (if time)

Plan: start either at temp wells so GW team can sample, or re-drilling MW-13. Consider installing TW13 instead.

0700 meet at office, gather supplies. Calibrate PID (see form) Calibrate YSI's: & turb.

0715 S/N: 0576 YSI

Conf. sol: 22A1C 1/04/24 (exp)

Sp: 6984 SPC: 7.49

ORP: 236.1 (actual) (actual) 7.63

~~(actual)~~: 222-252 pH: 7.02

(should be) Should be: 6.8-7.2

Location FAI MATT / Evers Date 8/26/28

Project / Client FAI DOT

0725 YSI - SN - 15H102751

Conf. sol: 22A1C 1/04/24 (exp)

ORP: 216 (212-242)

SPC: 7.422 (7.49)

pH: 7.06 (6.8-7.2)

Temp: 21.17

Calib Turbidimeter & PIDs, see calib sheet.

0742 Packed up. mob'd to site.

0800 Arr. at site, met drillers.

0805 Safety mtg - see POWER A form

0825 Set up rig to drill TW02

0845 Safety briefing for drill rig.

0856 Start drilling / pushing TW02 - set screen from 9.5 ft bgs to 12.25 ft bgs

0905 well installed. See form. mob rig to Cargo & MW-13

0931 Setup to auger MW-13

0957 Reached TD of 18' bgs. Shuttled IDW soil to IDW building.

11:00 Well is complete with sand, bent to nite, & gravel.

Rite in the Rain

Location FAI MAH / Everts Date 8/26/22

Project / Client FAI / DOT FAI MAH

11:20 Packed up drillers, departed well MW-13.

11:20 Mobil GW team to MW 7b.

11:41 Started GW development at MW 7b.

12.01 Finished surge & purge w. th Waterra & surge block. minimum of 3 mins per 2' section of screen. 2.8 gals

12.02 Turned on peri pump to purge remaining ~35 gals (min. purge). See development form for MW 7b.

12:22 Post Note:

(11:45 Drillers pulled TW02 at 11:45)

Drillers Lunch.

G. Wade returned to site SIDA to supervise K. Johnson & L. Livers.

12:20 K. Sicard departed SIDA to oversee drillers on next well(s).

12.30 Lunch.

12:45 Drums from Geotek dropped at site. K. Sicard set them up in cold storage

13:15 K. Sicard back on site, met drillers

13:30 Buck escorted us through gate 22

13:40 Set up on TW01

Location MAH / Everts Date 8/26/22

Project / Client FAI DOT

13:50 Began pushing TW01. Set screen to 9.5 ft bgs

14:02 down to 13.25.

Drillers mob to SB/MW-3b.

14:25 Started drilling SB/MW-3b

15:15 Sampling sweage zone @ 9.5-10

22MAH-SB3B-SO-9.5-10

1x 8 oz Amber → AK102/103, 8270, LEAD

1x 4 oz Amber w/ MeOH

↳ AK101, VOCs, EDB

tare 117.85g

MeOH w/ BFB VW10-31-26

1530 Sampling Vadose

22MAH-SB3B-SO-2-4

1x 8 oz Amber

1x 4 oz Amber w/ MeOH

14:15 Post-Nok:

15:20 Well MW-7b developed (See forms).

16:25 Well decom of MW 3 - see form.

16:30 K Johnson dump waste at Cold Storage Trough

Drum #1: MW04 (~15 gal), TW04 (~0.5 gal), TW03 (~0.5 gal), MW6b (~33 gal), MW7b (~10 gal)

Rite in the Rain

Location MAH/Everets Date 8/24/22 26 (KN 8/26)

Project / Client FAI DOT

Drum #2: MW70C (~28 gal), TW04 (~0.5 gal)
TW02 (~0.5 gal)

1730 Depart Everets for office

1745 Unpack & plug pumps/equip in

1800 Depart for EOD

KN 8/26

Location D MAH/Everets Date 8/27/22

Project / Client FAI DOT

0700 Arrive at office to pack+cal
YSI: S/N 05716 Pro Plus
Conf Sen: 22A1C, 01/4/24
Temp: 21.1C
PH: 6.8-7.2, 7.03 ✓
SPCond: 7030-8010 uS/cm, 7460 ✓, ✓
ORP: 212-242 mV, 235.5 ✓
Recal Cond: 7640 uS/cm ✓
Turb. 35559 2100P Turbidimeter
5.4 - cal 6.41
51.6 - cal check 56.6
502 - cal check 508
0735 Depart office for MAH
0800 Tailgate; New geos on rig, SIPs, tmps, falls
Personelle:
Jacobs: G Wade, L Lyles, K Johnson
Geotek: S Sems, J Daugherty
0830 Begin drilling at MW80
0900 Collect 22MAH-SB80-S0-6-8
0915 Collect 22MAH-SB80-S0-10-10.5 and dup 22MAH-SB80-S0-10-10.5a
0940 Installed well MW80
1045 Well completed

Rite in the Rain

Location FAIRBANKS/Everett Date 8/27/22

Project / Client D3536200

1100 Lunch
1130 Livers & Gretchek decomission MW6
1200 K Johnson, G Wade to MW13 for dev.
1245 Complete Surging Screen and start pumping
1500 K Johnson depart MW13 for Sampling at MW66
YSI Cal: 556 MPS
Temp = 21.77C
SPCond = 7630-8010, 7634 ✓
ORP = 212-242, 217.6 ✓
PH = 6.8-7.2, 7.01 ✓
1530 Collect 22MAIA-MW66-GW
1545 Begin Cleaning up site & depart for office G Wade to Storage to dump Waste
1630 Depart Fairbanks office for EOD

8/27
KAD

Location FAIRBANKS Date 8/29/22

Project / Client

0730 Arrive at RBKS office
0740 Calibrate PIDs (see form)
0750 Cal YSI
556 MPS
Temp: 21.49C
PH: 6.8-7.2, 7.05
ORP: 212-242 mV, 216.6 mV
Sp.Cond: 7630-8010 uS/cm, 7645 uS/cm
ProPlus S/N 0576
Temp: 20.5C
PH: 6.8-7.2, 7.07
ORP: 212-242 mV, 238.9 mV
Sp.Cond: 1418 uS/cm 7630-8010 uS/cm, 7660 uS/cm
Recal cond.
0800 Calibrate Turbidity Meter 2100P
35559 Stablcal Lot A2082
0.1 NTU ✓ 20 NTU ✓ 100 ✓ 800 ✓
842 Arrive at MW86 for dev
850 Started Surging 2 ft intervals
920 Started pumping MW86
~~-Alec stayed at MW86~~ KAD 8/29
-Artemisan Stay at MW86 for pumping
K Johnson set up to Surge MW12
0940 K Johnson Begin Surging MW12

Rite in the Rain

54

Location MAH/Everett Date 8/29/22

Project / Client D3536200

1005 Begin pumping MW12
1120 Complete dev at MW86
1130 Begin readings at MW12
1205 Complete dev at MW12
1220 Pump waste
1330 Begin Surging at MW3b
1545 Complete dev at MW3b
1600 Pump Waste
1700 Depart for EOD

RSO 8/29

Location MAH/Everts GW sampling Date 8/30/22

55

Project / Client D3536200

0800 Arrive @ FHS office
0845 Calibrate PID (see form)
0850 Calibrate YSI Pro Plus
S/N 0576
Temp 21.5°C
pH: 7.02 ✓
ORP: 236.5 ✓
SpCond: [redacted] 7640 ✓
0850 Calibrate Turbidimeter
TURB 36059
5.4 - cal 5.60
51.6 - cal 56.5
502 - cal 511
0930 Leave office
0940 Arrive at MAH Everts
1000 Arrive at MW13
1035 Started pumping at MW13
1100 Stability reached
1105 Sample collected
22MAH-MW13-GW

1140 Leaving MW13 headed to MW7b
1150 Arrive at MW7b
1210 started pumping @ MW7b

Rite in the Rain

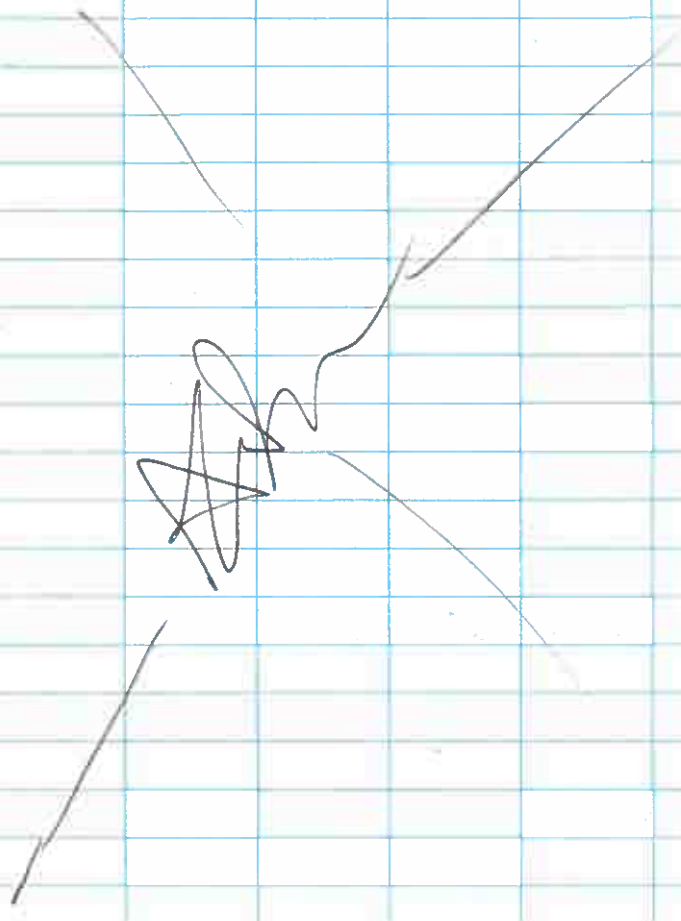
Location MAH/Events GW Sampling Date 8/30/22

Project / Client

1240 Stabilized reached @ MW-76
1245 Collected sample

22MAH-MW76-GW

1300 Leave MAH



Location MAH/Events GW Sampling Date 8/31/22

Project / Client FAI DOT

0730 Meet at Fbks Office
0731 Begin calibrating Equipment
0735 Turb 36559
5.4 - cal check 6.0
51.6 - 56.9
502 - 508
0740 Calibrate YSI ProPlus S/N 0576
Temp: 21.9°C
Spcn: 6573 - Needs cal.
ORP: 234.6 ✓
pH: 7.03 ✓
Cal Conductivity using 1413 µs/cm Con. Std
Lot: cc 22315
Exp: 02/28/23
21°C reading was 1200
corrected to 1305 ✓
0912 Arrive at MAH/Events @ MW-86
0935 Start pumping @ MW-86
1005 Stabilized at MW-86
1014 Sample collected

22MAH-MW86-GW
Dup: 22MAH-MW86-GWA

1055 Leave Location at MW-86 for MW12

Location MAH/Events Date 8/31/22

Project / Client FAI DOT

1100 Arrive @ MW12
1120 Start pumping
1155 Stability reached
1200 Sample collected

22MAH-MW12-GW

1230 Leave MW12
1245 Take Lunch
115 Return to MAH
140 Get access to MW-36 from Col
200 Started pumping MW-36
230 MW-36 reached Stability
318 Leaving MAH/Events
324 Brought IDW from sampling to FAI Hazmat building
3x40gal > IDW water
1x35gal
1 AS Roll Soil + 1/3 NS Roll soil
400 Return equipment to TTT
500 clean out truck and take to 4x4 Rentals for Return.

Location Date

Project / Client

ISBN 978-1-932149-50-0

JACOBS

Health & Safety Instrument Calibration Log

PROJECT NO.: D3635200

PROJECT LOCATION: DOT FAI MAH

PROJECT ACTIVITY: Installation of TW + MW

Date	Time	Instrument	Mfg Model	Serial No.	Calibration Gas	Lot No.	Concentration	BKG Counts	Span Settings	Initials
8/24/22	730	PID	MiniRae3000	592-918318	Isobutylene	18-6614	100 ppm	0.9ppm	100.5ppm	AJ
8/25/22	730	PID	MiniRae3000	592-918318	Isobutylene	18-6614	100 ppm	0.0ppm	100.0ppm	AJ
8/26/22	715	PID	MiniRae3000	592-918318	Isobutylene	18-6614	100 ppm	0.0 ppm	100.0ppm	LL
8/26/22	720	PID	MiniRae3000	592-914824	Isobutylene	18-6614	100 ppm	0.0 ppm	100.0ppm	LL
8/27/22	715	PID	MiniRae3000	592-918318	Isobutylene	18-6614	100 ppm	0.0 ppm	100.0 ppm	LL
8/29/22	740	PID	MiniRae3000	592-918318	Isobutylene	18-6614	100 ppm	0.0ppm	100.1ppm	AJ
~~8/29/22~~	~~745~~	~~PID~~	~~MiniRae3000~~	~~592-914824~~	~~Isobutylene~~	~~18-6614~~	~~100ppm AJ~~			
8/29/22	745	PID	MiniRae3000	592-914824	Isobutylene	18-6614	100 ppm	0.0 ppm	100.1ppm	AJ
8/30/22	850	PID	MiniRae3000	592-914824	Isobutylene	18-6614	100 ppm	0.0 ppm	100.2ppm	MC
8/31/22	734	PID	MiniRae3000	592-914824	Isobutylene	18-6614	100ppm	0.0 ppm	100.0 ppm	MC

FIELD TEAM LEADER SIGNATURE _____

Jacobs

Well Construction
Flush Mount, Water Table Screen

PROJECT: FAJ MAH

WELL ID: MW3B

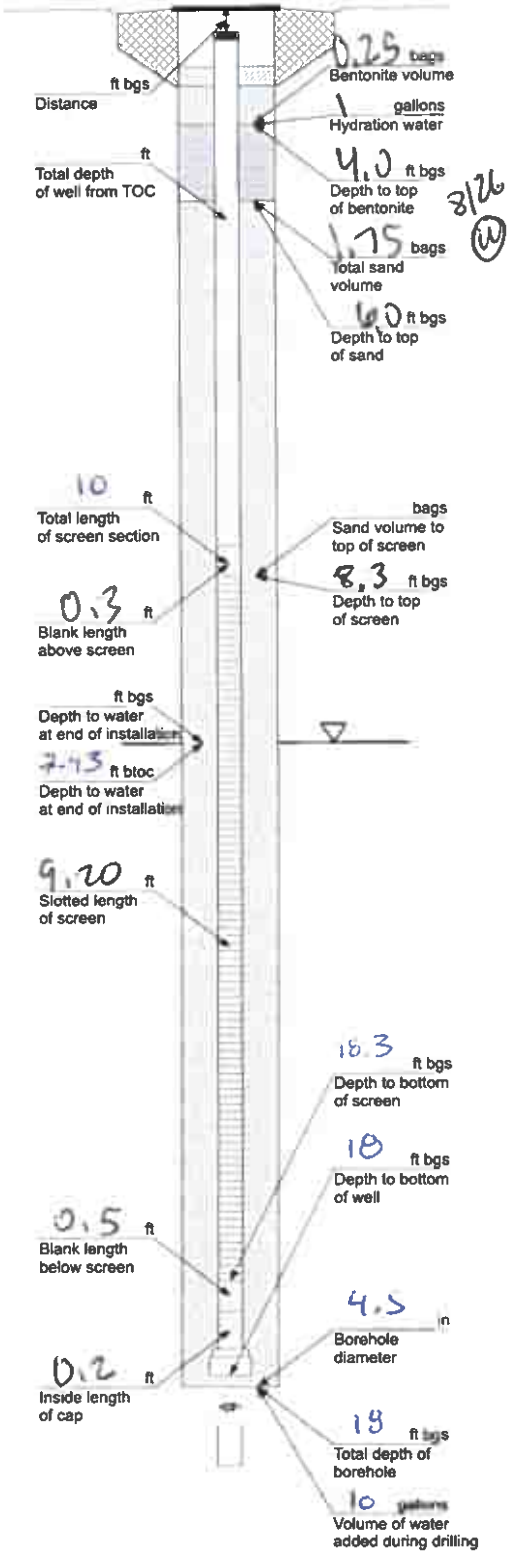
DRILLER: STEVE SIMAS

DATE(S) INSTALLED: 8/26/22

EQUIPMENT: GEOPROBE 7822DT w/ DT45 TRAILER

GEOLOGIST: LAUREN LIVERS / LARRY ARNSKOV

BOREHOLE ID: MW3B



Vault
Size: 8" diameter
Manufacturer: Morrison Bros

Concrete around Vault
Type: Multipurpose mix
Manufacturer: Fairbanks Bloide

Well Riser
Size: 2-inch Sch 40, ASTM F480 flush threads
Material: PVC
Manufacturer: Morrison Bros

Well Screen
Size: 2-inch Sch 40, ASTM F480 flush threads
Slot size: 0.020 in | 0.010 in
Sand size (if pre-pack): 20/40 | 16/30 | 10/20
Material: PVC
Manufacturer: Johnson

End Cap
BULLET

Bentonite (sodium)
Size: 3/8", 50 lb bag
Manufacturer: Baroid/Halliburton

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
4.5	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50-lb bag = 0.504 ft³ based on a porosity of 0.4 corresponding to a bulk density of 99.3 lbs/ft³

Other Notes

INSTALLATION COMPLETE AT 1600

↳ 0.5' OF RISER CUT OFF AFTER INSTALLATION MEASUREMENTS

G:\SHARED\SOPs\IE-SOP-1200 WellInstDevel\Attachments\Att1 WellConstrForms r1.odt\Flush_WnTbl 2016.04.11

Jacobs

Well Construction
Flush Mount, Water Table Screen

PROJECT: Mark Air Hangar

WELL ID: MW-6b

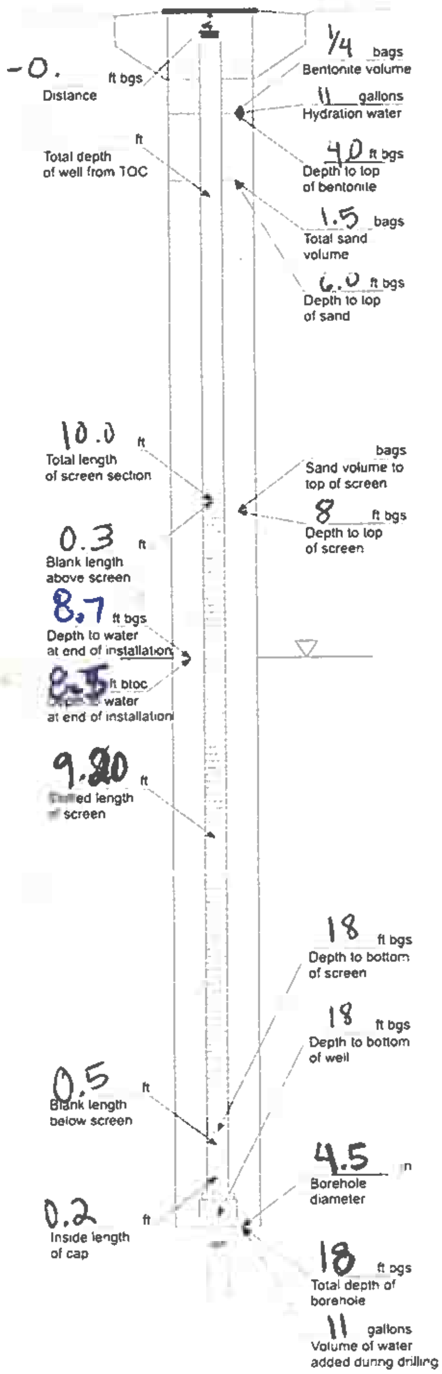
DRILLER: Steve Simas - GeoTek

DATE(S) INSTALLED: 8/24/22

EQUIPMENT: Geoprobe

GEOLOGIST: K. Sicard & A. Jemison

BOREHOLE ID: MW-6b



Vault
Size: 8" diameter
Manufacturer: Morrison Bros

~~Concrete~~ around Vault
Type: Asphalt "Cold patch"
Manufacturer: QPR

Well Riser
Size: (2-inch Sch 40) ASTM F480 flush threads
Material: (PVC)
Manufacturer: ~~Johnson~~ Morrison Bros

Well Screen
Size: (2-inch Sch 40) ASTM F480 flush threads
Slot size: 0.020 in | (0.010 in)
Sand size (if pre-pack): 20/40 | 16/30 | (10/20)
Material: PVC
Manufacturer: Johnson

End Cap
Morrison Bros
Cone cap

Bentonite (sodium)
Size: 3/8" - 1/4" chips 50 lb bag
Manufacturer: Halliburton

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
(4.5)	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50 lb bag = 0.504 ft³ based on a porosity of 0.4 corresponding to a bulk density of 99.3 lbs/ft³

$\pi r^2 * h$

.19 (radius)^2 * 20' - 1gal H_2O added during drilling

Other Notes

Drillers added:
1.5 bags of sand
2 ft thick 8 to 6' bgs
(1/4 bag bentonite)
2' hole plug 6-4' (3/8")
4' to surf. pea gravel

Jacobs

Well Construction
Flush Mount, Water Table Screen

PROJECT: FAI MAH

WELL ID: MW-7b

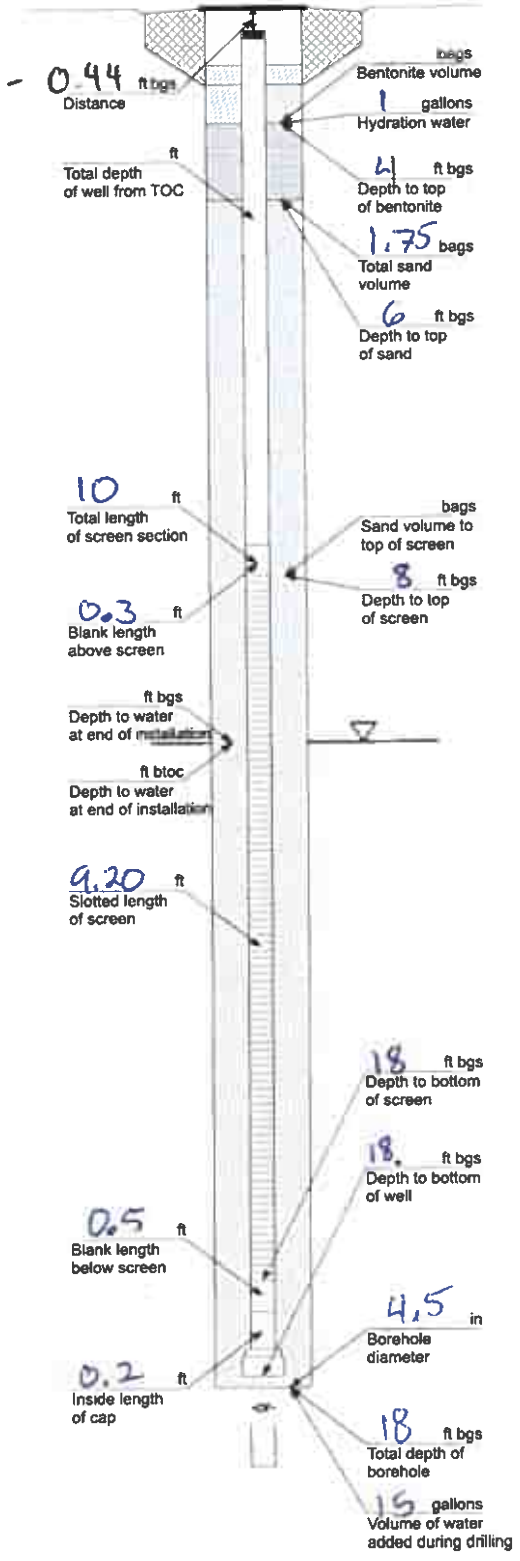
DRILLER: Geotek

DATE(S) INSTALLED: 8/25/22

EQUIPMENT: Geoprobe 7822DT

GEOLOGIST: Alex Jenison

BOREHOLE ID: SB 7b



Vault
Size: 8" diameter
Manufacturer: Morrison Bros.

Concrete around Vault
Asphalt
Type: Cold Patch asphalt
Manufacturer: QPR

Well Riser
Size: 2-inch Sch 40, ASTM F480 flush threads
Material: PVC
Manufacturer: Morrison Bros

Well Screen
Size: 2-inch Sch 40, ASTM F480 flush threads
Slot size: 0.020 in | 0.010 in
Sand size (if pre-pack): 20/40 | 16/30 | 10/20 (#3)
Material: PVC
Manufacturer: Johnson

End Cap
Cone cap
Morrison Bros

Bentonite (sodium)
Size: 3/4", 50 lb bag
Manufacturer: Baroid/Halliburton

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
4.5	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50-lb bag = 0.504 ft³ based on a porosity of 0.4, corresponding to a bulk density of 99.3 lbs/ft³

Other Notes

G:\SHARED\SOPs\JE-SOP-1200 Wells\Devel\Attachments\Att1 WellConstrForms r1.odt\Flush, WT.Tbl 2016.04.11

Jacobs

Well Construction
Flush Mount, Water Table Screen

PROJECT: FAI MAM

WELL ID: MW-8B

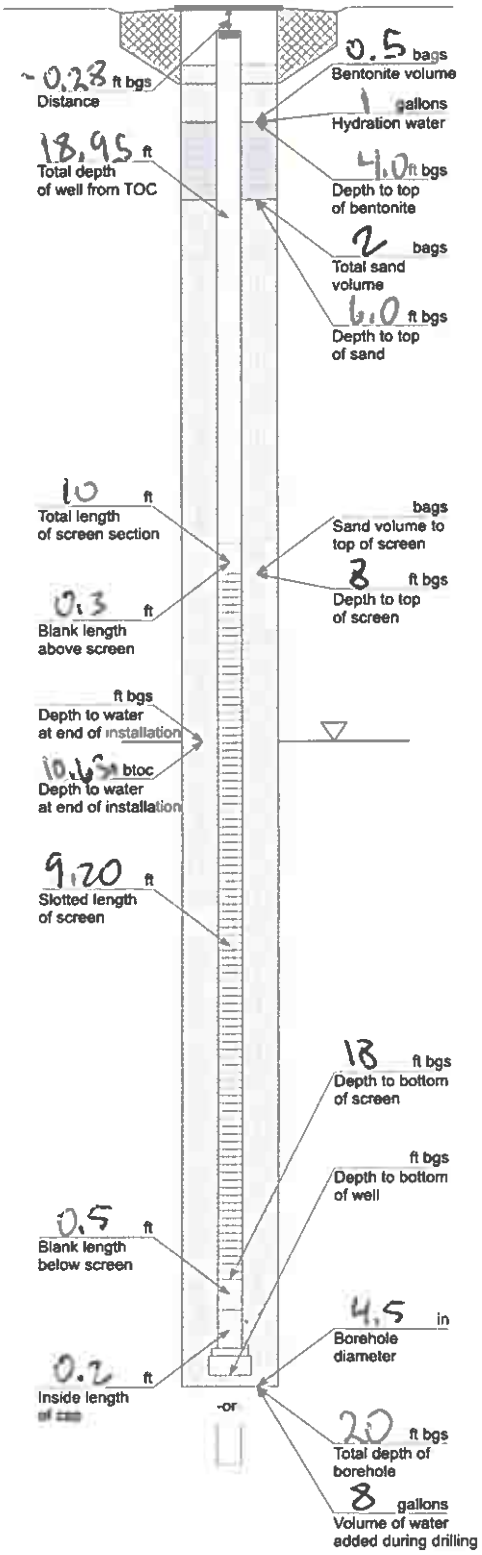
DRILLER: Steve Simms

DATE(S) INSTALLED: 3/27/22

EQUIPMENT: Geoprobe 7822DT DT45 Tooling

GEOLOGIST: L Livers

BOREHOLE ID: MW-3B



Vault
Size: 8" diameter
Manufacturer: Morrison Bros

Concrete around Vault
Type: Multi purpose mix
Manufacturer: Fairbanks Block

Well Riser
Size: 2-inch Sch 40, ASTM F480 flush threads
Material: PVC
Manufacturer: Morrison Bros

Well Screen
Size: 2-inch Sch 40, ASTM F480 flush threads
Slot size: 0.020 in / 0.010 in
Sand size (if pre-pack): 20/40 | 16/30 | 10/20
Material: PVC
Manufacturer: Johnson

End Cap
Cone Cap
Morrison Bros

Bentonite (sodium)
Size: 3/8", 50 lb bag
Manufacturer: Baroid/ Halliburton

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
4.5	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50-lb bag = 0 504 ft³ based on a porosity of 0.4 corresponding to a bulk density of 99.3 lbs/ft³

Other Notes

Well completion at 1050
8 gallons water added

G:\SHARED\SOP\JE\SOP-1200 WellInstDevel\Attachments\Att1 WellConstrForms r1.cdr\Flush, WnTbl 2016.04.11

Jacobs

Well Construction
Flush Mount, Water Table Screen

FAI

PROJECT: Mark Air Hangar (Everts Air)

WELL ID: MW-12

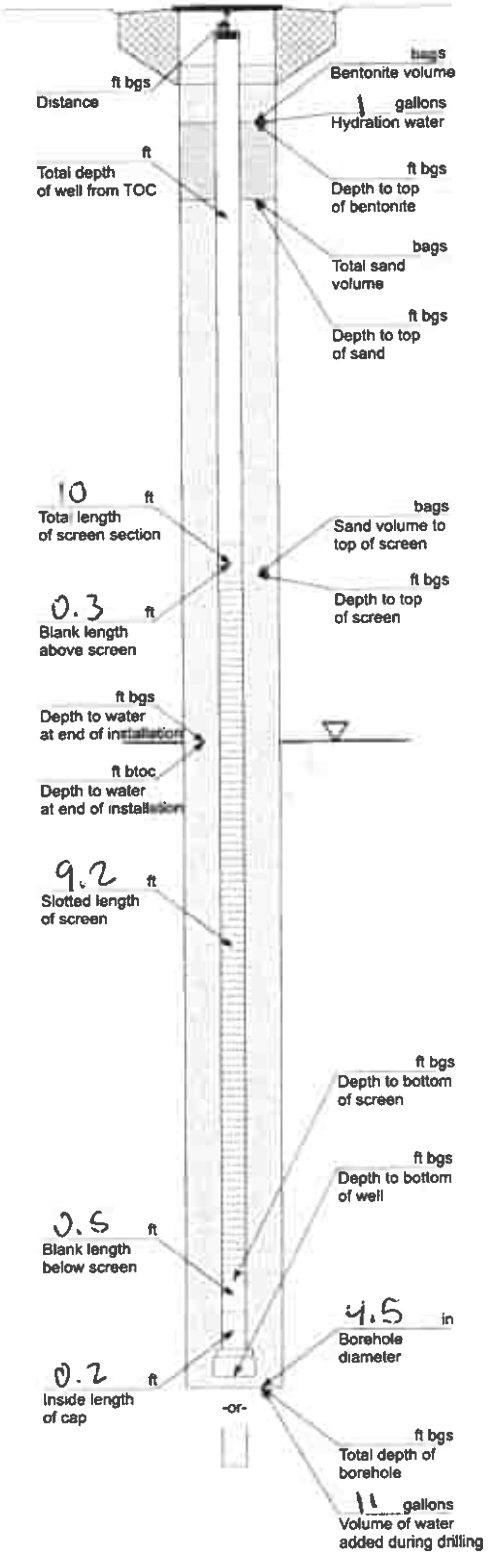
DRILLER: Steve Simcox - GeoTEK

DATE(S) INSTALLED: 8/25/22

EQUIPMENT: 7822 DT Geoprobe

GEOLOGIST: Karr Sicard

BOREHOLE ID: SB-12



Vault
Size: 8" diameter
Manufacturer: Morrison Bros

Concrete around Vault
Type: Asphalt
Manufacturer:

Well Riser
Size: (2-inch Sch 40) ASTM F480 flush threads
Material: (PVC)
Manufacturer: Morrison Bros

Well Screen
Size: (2-inch Sch 40) ASTM F480 flush threads
Slot size: 0.020 in (0.010 in)
Sand size (if pre-pack): (20/40) | 16/30 | 10/20
Material: (PVC)
Manufacturer: Johnson

End Cap
Cone tip

Bentonite (sodium)
Size: 3/8", 50 lb bag
Manufacturer: Halliburton/Baroid

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
(4.5)	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50-lb bag = 0.504 ft³ based on a porosity of 0.4 corresponding to a bulk density of 99.3 lbs/ft³

Other Notes

Added ~12 gals water during drilling & setting of well

G:\SHARED\SOPs\JE-SOP-1200 Wells\Deve\Attachments\Att1 WellConstrForms r1.cdr\Flush. WtrTbl 2016.04.11

Jacobs

Well Construction
Flush Mount, Water Table Screen

PROJECT: FAI Mark Air Hangar (Everts Air)

WELL ID: MW-13

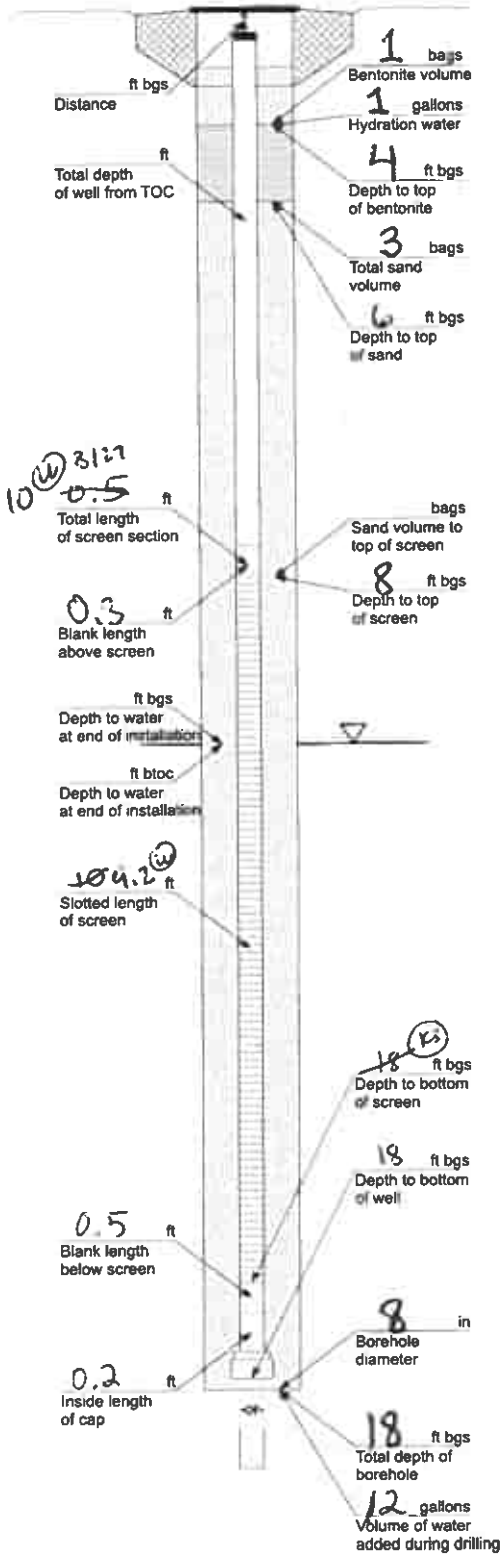
DRILLER: Steve Simas - GeoTek

DATE(S) INSTALLED: 8/24, 8/25, 8/26/22

EQUIPMENT: ~~Hf~~ 7822 DT — Drilled with macro core, then DP 45, Finished drilling with

GEOLOGIST: Karr. Sicard

BOREHOLE ID: SB-13 / MW-13



Vault
Size: 8" diameter
Manufacturer: Morrison Bros.

Concrete around Vault
Type: N/A Asphalt
Manufacturer: ~~Quikrete~~

Well Riser
Size: 2-inch Sch 40, ASTM F480 flush threads
Material: PVC (W) 3/27
Manufacturer: ~~Johnson~~ Morrison Bros

Well Screen
Size: 2-inch Sch 40, ASTM F480 flush threads
Slot size: 0.020 in | 0.010 in
Sand size (if pre-pack): 20/40 | 16/30 | 10/20
Material: PVC
Manufacturer: Johnson

End Cap
Core tip

Bentonite (sodium)
Size: 3/8", 50 lb bag
Manufacturer: Hallibuton / Baroid

Sand
Size: 10/20, 50-lb bag
Manufacturer: Colorado Silica

started with DP 45 moved to 2" auger after second refusal

Sand Utilization for 100% Open Hole (No Collapse)

Borehole Diameter		Sand Volume (2-inch Well)		
Inches	Feet	Bags/ft	Bags/11 ft	ft/Bag
4.5	0.38	0.18	1.9	5.7
6	0.50	0.35	3.8	2.9
8	0.67	0.65	7.1	1.5

Note:
50-lb bag = 0.504 ft³ based on a porosity of 0.4, corresponding to a bulk density of 99.3 lbs/ft³.

Other Notes

Added ~12 gals water during drilling

Difficult - compacted gravel ~3-4' refusal. Auger made it through no problem.

G:\SHARED\SOPs\JE-SOP-1200 Wells\tDewell\Attachments\Att1 WellConstrForms r1.odt\Flush. WiTbl 2016.04.11

Well Decommissioning Report

Jacobs

Well ID, Date, Location

Well ID	Well Owner	Project Number	Date of Work
MW-06	FAI		8/27/22

Site Name	Location (e.g., city, state)	Geographical Coordinates
Markair hangar	Fairbanks, AK Everts Air Cargo	Unk east / long Unk north / lat Unk system, units

Rationale, Contractors

Reason for Decommissioning	Decommissioning Oversight	Drilling Subcontractor
Not Viable	Jacobs Engineering 4300 B St, Suite 600 Anchorage, AK 99503 907-563-3322 Field Lead: _____	Geo Tech

Well Dimensions

Type of Construction	Stickup (ft ags)	Total Depth As Built (ft btoc)	Total Depth As-Is (ft btoc)	Depth to Water (ft btoc)
PVC Flush Mount	Grand Level	Unk	unk	unk

Decommissioning Details

Decommissioning Procedure	Decommissioning Notes
Brought up PVC - broke at 3' Attempt to tag bottom Fill with bentonite	- Pulled ~3' of PVC, rest remains in ground - tag at 2.5' bgs, below is full of gravel - bentonite 3/8 inch fill to 6" bgs - fill in to top with surrounding gravel

Qty of Sand	Type of Sand	Qty of Bentonite	Type of Bentonite
N/A	N/A	~2' in a 2" diam well	3/8"

Waste Handling

Waste Generated	Waste Disposition
~3' PVC	~~Unknown~~ landfill (LD)

Well Decommissioning Report

Jacobs

Well ID, Date, Location

Well ID	Well Owner	Project Number	Date of Work
MW-3	FAI		August 26 2022
Site Name	**Location (e.g., city, state)**	**Geographical Coordinates**	
Merle A. - Henger	Fairbanks Ak Fed Ex Air Cargo	unk east / long unk north / lat unk system, units	

Rationale, Contractors

Reason for Decommissioning	Decommissioning Oversight	Drilling Subcontractor
Not Visible	Jacobs Engineering 4300 B St, Suite 600 Anchorage, AK 99503 907-563-3322 Field Lead: _____	GeoTech

Well Dimensions

Type of Construction	Stickup (ft ags)	Total Depth As Built (ft btoc)	Total Depth As-Is (ft btoc)	Depth to Water (ft btoc)
PVC Flush Mount	Ground Level	unk	17.10	7.15

Decommissioning Details

Decommissioning Procedure	Decommissioning Notes
Punched out Bottom of well 3/8-inch Bentonite	Filled to TOW with Bentonite Pulled entire well.

Qty of Sand	Type of Sand	Qty of Bentonite	Type of Bentonite
		25lbs	3/8-inch Hole Plug

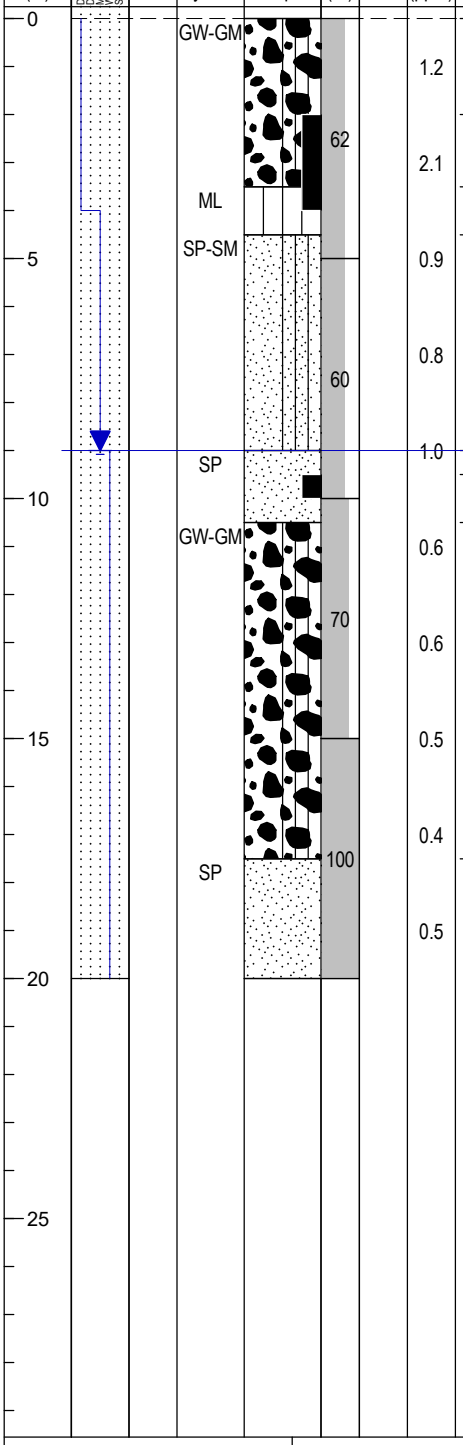
Waste Handling

Waste Generated	Waste Disposition

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-3b** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **430.77** Elev. Datum
Easting (ft) **3,955,245.3**	Northing (ft) **1,346,951.4**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **26 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Lauren Livers**
Type of Hole: **Soil Boring**	Depth to Groundwater: **9.0 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **6.1 m**



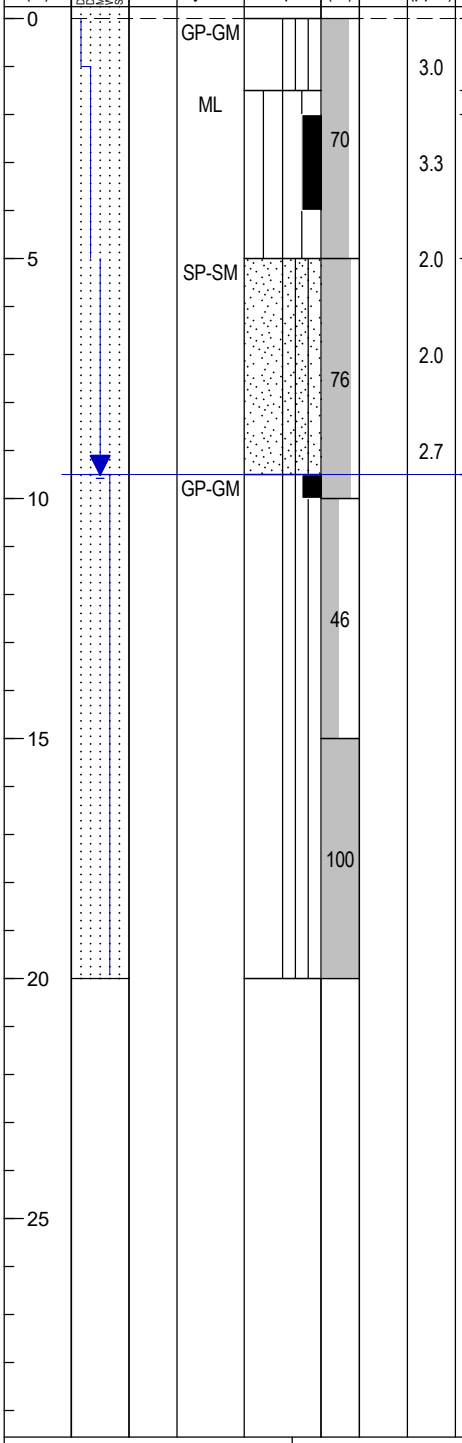
Description

- Gravel with Silty Sand, brown and gray, gravel is subrounded, sand med-coarse grain.
- Sample: 22MAH-SB3B-SO-2-4
- Silt with Fine Sand, some black organic layers, dark gray, stiff
- Sand with Silt, orange and brown, sand fine-medium grain, one inch layers of SM.
- Sand, fine to medium grain, light brown and gray
- Sample: 22MAH-SB3B-SO-9.5-10
- Gravel with Silty Sand, gray, subrounded gravel, medium to coarse sand
- Sand, fine to medium grain, gray

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-6b** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **431.31** Elev. Datum
Easting (ft) **3,955,468.4**	Northing (ft) **1,347,322.6**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **24 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Alec Jemison**
Type of Hole: **Soil Boring**	Depth to Groundwater: **9.5 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **6.1 m**

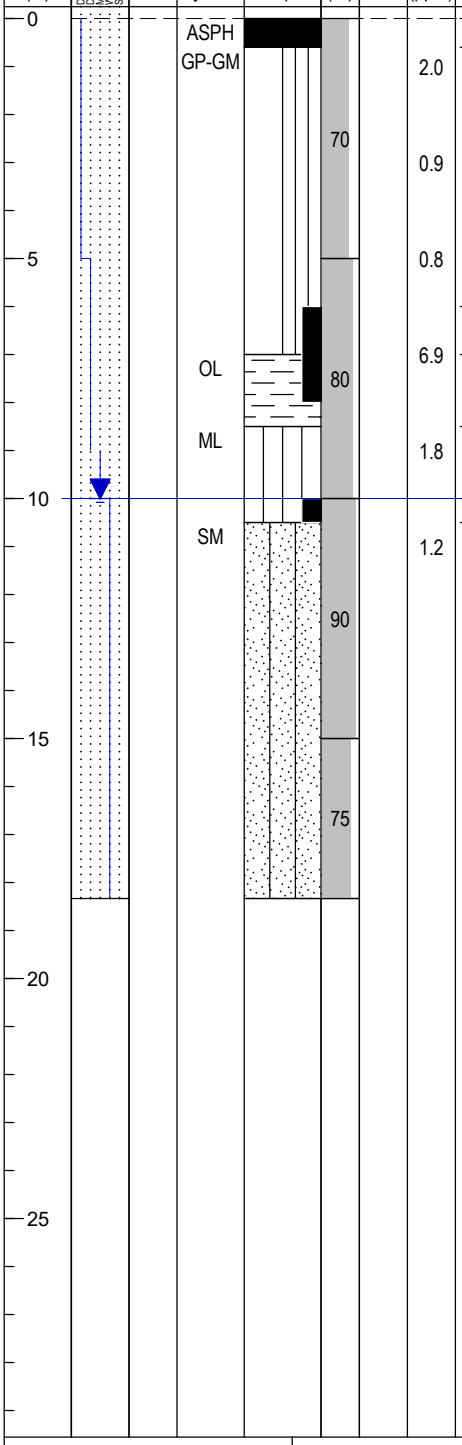


Depth (m)	PID (ppm)	Description
0		Gravel with Silt and Sand, medium gray, subrounded to subangular gravel with coarse sand
	3.0	
		Sandy Silt, with some black organic layers, brown silt, fine to coarse sand
		Sample: 22MAH-SB6b-SO-2-4
	3.3	
5	2.0	Sand with Silt, gray and tan, coarse sand
	2.0	
	2.7	
10		Poorly Graded Gravel with Silt and Sand, coarse to fine gravel, subangular to subrounded, gray and brown, with coarse sand
		Sample: 22MAH-SB6b-SO-9.5-10

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-7b** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **434.58** Elev. Datum
Easting (ft) **3,955,033.9**	Northing (ft) **1,347,353.4**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **25 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Alec Jemison**
Type of Hole: **Soil Boring**	Depth to Groundwater: **10.0 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **5.6 m**

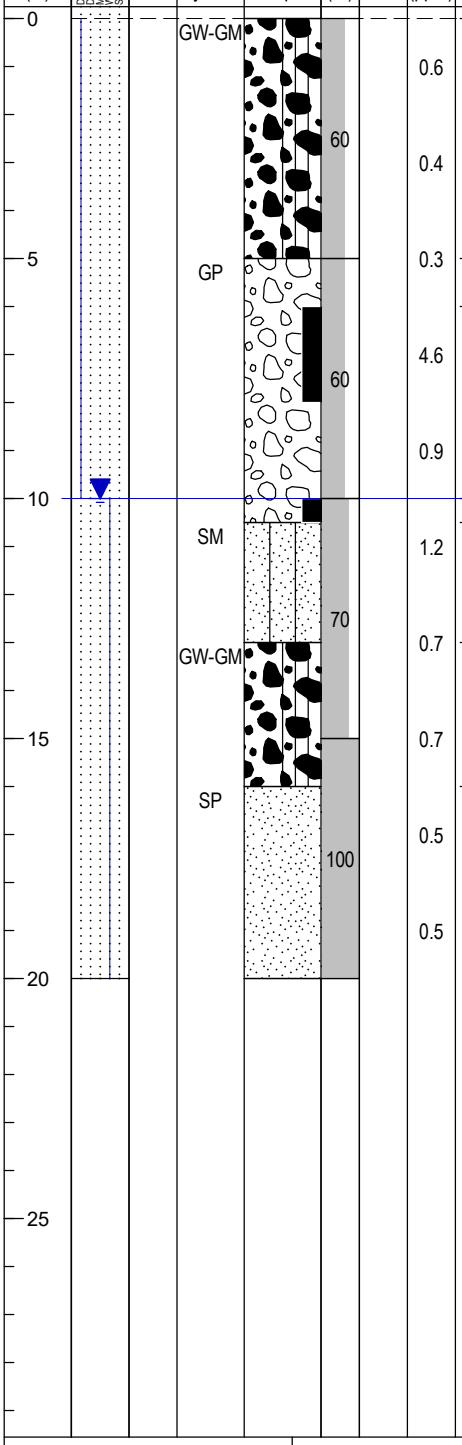


PID (ppm)	Description
	Asphalt
2.0	Poorly Graded Gravel with Silt and Sand, gray, coarse to medium subrounded to subangular gravel, coarse sand.
0.9	
0.8	
	Sample: 22MAH-SB8b-SO-6-8
6.9	Organic Silt, black, fibrous with wood pulp, trace sand and gravels.
1.8	Silt with Sand, gray, trace organics, laminated sand/silt <.25 inches.
	Sample: 22MAH-SB8b-SO-10-10.5 and Dup: 22MAH-SB8b-SO-10-10.5A
1.2	Silty Sand, gray, coarse to fine sand, trace organics.

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-8b** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **434.61** Elev. Datum
Easting (ft) **3,955,189.8**	Northing (ft) **1,347,130.0**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **27 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Lauren Livers**
Type of Hole: **Soil Boring**	Depth to Groundwater: **10.0 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **6.1 m**

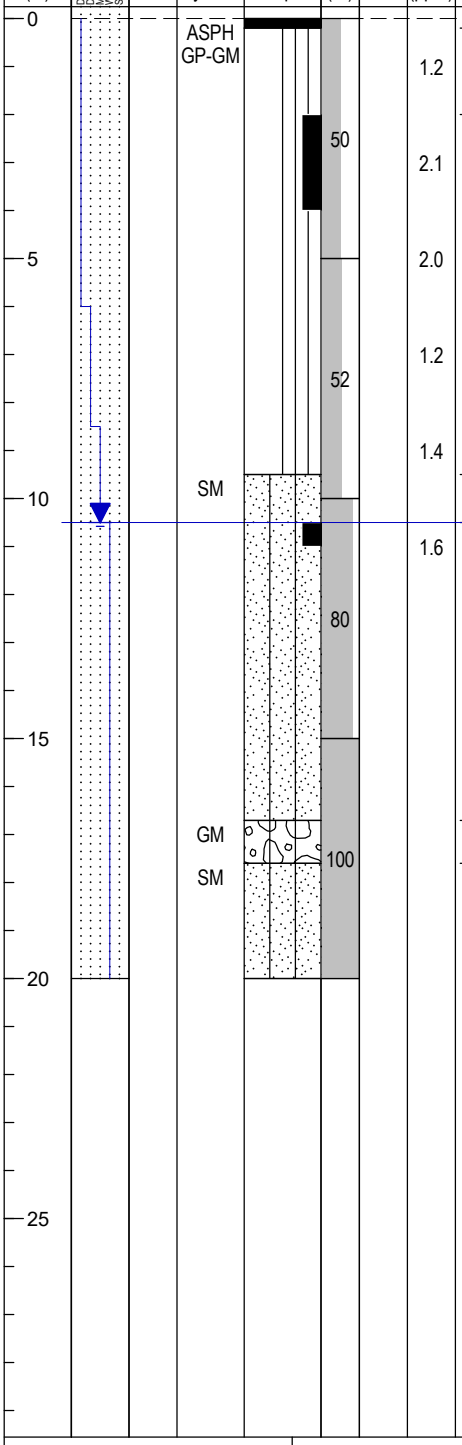


Description
Gravel with Silty Sand, brown, subrounded gravel, medium grain sand.
Gravel with trace sand, tan, subrounded to subangular gravel, medium to coarse subangular to angular sand.
Sample: 22MAH-SB8B-SO-6-8
Sample: 22MAH-SB8B-SO-10-10.5
Silty Sand, brown and gray, trace gravel, medium stiff.
Gravel with Silty Sand, brown and gray, subangular to subrounded gravel, medium to coarse sand with some fines.
Sand, medium grain, gray and brown.

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-12** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **435.63** Elev. Datum
Easting (ft) **3,955,323.6**	Northing (ft) **1,347,392.9**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **25 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Alec Jemison**
Type of Hole: **Soil Boring**	Depth to Groundwater: **10.5 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **6.1 m**

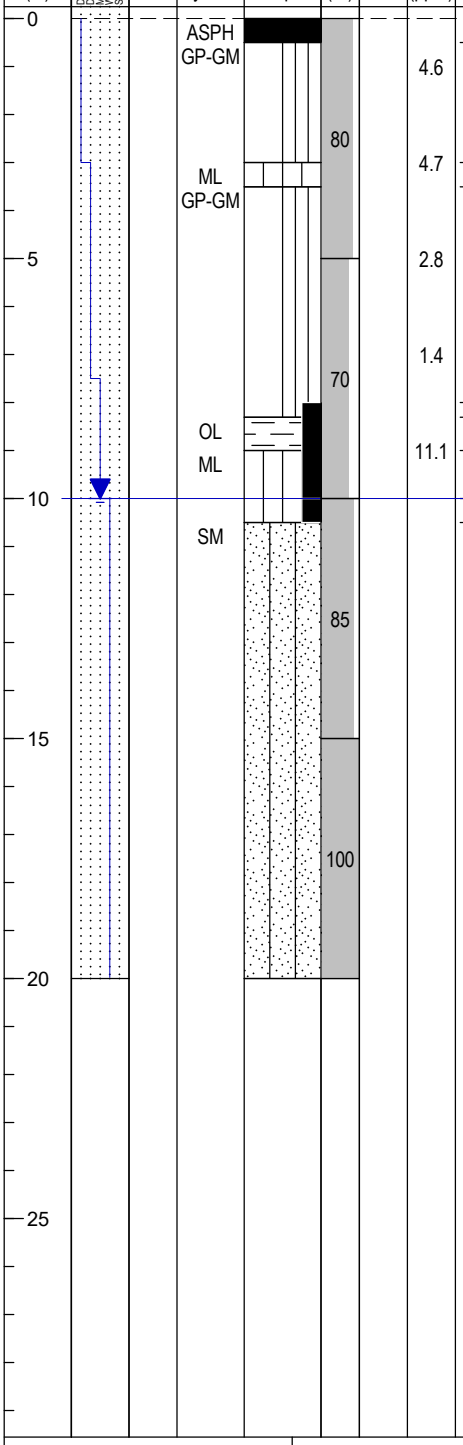


Description
Poorly Graded Gravel w/ Silt & Sand, Brown, Coarse to Medium Subangular-Subrounded Gravel with Coarse Sand
Sample: 22MAH-SB12-SO-2-4
Silty Sand, Brown, Coarse, Thin Laminations
Sample: 22MAH-SB12-SO-10.5-11
Silty Gravel with Sand, Brown and Gray, Coarse to Medium Subangular-Subrounded Gravel with Coarse Sand
Silty Sand with Trace Gravel, Gray

JACOBS®

BORING LOG

Project: **DOT&PF FIA Mark Air Hangar Site Characterization**		ID: **SB-13** Transect:
Client: **Alaska DOT&PF**		Surface Elev. (ft) **434.75** Elev. Datum
Easting (ft) **3,955,255.9**	Northing (ft) **1,347,546.3**	Projection (Ellipsoid) **Alaska State Plane Zone 3 (NAD83)**
Date Drilled: **24 Aug 2022**	Driller: **Geotek Alaska**	Geologist: **Alec Jemison**
Type of Hole: **Soil Boring**	Depth to Groundwater: **10.0 m bgs (estimated during drilling)**	
Drill Rig: **Geoprobe 7822DT**	Tooling: **DT45 OD: 4.5 in. / ID: 3.75 in.**	Total Depth: **6.1 m**



Description
Poorly Graded Gravel with Silt and Sand, medium to coarse subangular to round gravel, coarse sand, gray.
Silt, trace organics and gravels, brown.
Poorly Graded Gravel with Silt and Sand, medium to coarse subangular to round gravel, coarse sand, gray.
Sample: 22MAH-SB13-SO-8-10
Highly Organic Silt, brown and gray, fibrous.
Silt, trace sand, gray.
Sample: 22MAH-SB13-SO-10-10.5
Silty Sand, coarse to fine grained sand, gray and brown, trace organics and gravels.

APPENDIX F
Surveying Report

Fairbanks International Airport Monitoring Wells

Survey & Mapping Final Project Report

November, 2022

This page intentionally left blank.

Table of Contents

1. Project Overview and Summary

Purpose of Survey:

The purpose of this survey was to determine coordinates and elevations for 7 monitoring wells and adjacent ground elevations at the Fairbanks International Airport (FAI) MarkAir Hangar and 3 monitoring wells and adjacent ground elevations at the FAI Brooks Fuel site. The figure below on the left shows monitoring well locations from the MarkAir Hanger site, and the figure below on the right shows monitoring well locations from the Brooks Fuel site. Work was performed by Lounsbury & Associates, Inc. under contract to Jacobs Engineering Group Inc.

Date of Survey:

Fieldwork for this survey was completed by Lounsbury & Associates, Inc. in November, 2022. The field crew consisted of Jordan Shaffer, LSIT and Alex Jeric.

Equipment and Methodology:

GPS surveys were performed using Trimble R10 and R12i receivers. Project control was surveyed using static GPS survey methods. Differential leveing was performed using a Leica DNA-10 digital level.

2. Survey Reduction Narrative

Coordinate System Summary

COORDINATE SYSTEM:
THIS PROJECT REFERENCES THE NAD83(2011), STATE PLANE ZONE 3, COORDINATE SYSTEM. COORDINATES SHOWN ARE GRID WITH UNITS IN U.S. SURVEY FEET.

BASIS OF COORDINATES:
THE BASIS OF COORDINATES IS PRIMARY AIRPORT CONTROL STATION (PACS), FAI A (551), HAVING PUBLISHED COORDINATES OF
N: 3956198.298'
E: 1351803.084'

AND SECONDARY AIRPORT CONTROL STATION (SACS), FAI B (552), HAVING PUBLISHED COORDINATES OF
N: 3959156.885'
E: 1352843.210'

BASIS OF BEARINGS:
THE BASIS OF BEARINGS ARE NAD83(2011), STATE PLANE ZONE 3, GRID BEARINGS.

VERTICAL CONTROL STATEMENT
VERTICAL DATUM IS NAVD88 (GEOID12B), AS ESTABLISHED BY HOLDING THE PUBLISHED ELEVATION OF FAI A FIXED AT 431.4' AND HOLDING THE PUBLISHED ELEVATION OF FAI B FIXED AT 432.2.'

Field Procedures – Control and Topography

Recovered horizontal control was supplemented with four additional set control points (401-404), consisting of 1" mag nails set in the ground. The static control network included two recovered control points (551, 552) and 4 set control points (401-404). All recovered and set control points were occupied for a minimum of 2x20 minute sessions with an antennae height change in between.

The monitoring well surveys were performed using differential leveling procedures with a digital level and Real Time Kinematic (RTK) techniques with Trimble R12i GPS receivers. RTK check shots were performed at the beginning and end of each survey session, at a minimum, by re-shooting previously surveyed control points with different on-the-fly initializations to rule out systematic errors. All check shots were under 0.10' magnitude in XYZ.

Static Processing

Lounsbury & Associates used Trimble Business Center v.5.70 software to process all static baselines and perform the GPS network adjustment in this report, using published control values of PACS FAI A and SACS FAI B fixed. If necessary, individual baselines were viewed by timeline and manually cleaned to remove patchy satellite observable data or sections of excessive cycle slips on all recorded GNSS frequencies.

Processing - Levelling

Differential level loops were run between horizontal control and all monitoring wells to measure top of PVC and adjacent ground elevations. These loops were very tight, with minimal misclosures noted in each loop. A least-squares adjustment was performed to adjust each loop.

Processing - Topography

RTK survey data processing was performed using Trimble Business Center v. 5.70 software to obtain horizontal location of monitoring wells. A large number of check shots were performed to ensure good on-the-fly RTK initialization and to rule out systematic errors. All topographic survey check shots were under 0.10' magnitude in XYZ. ASCII points were generated after reviewing the checkshot report and RTK system statistics reports. These reports are referenced in Section 5 of this report document.

Problems Encountered

The four temporary wells that were requested to be surveyed at the MarkAir Hangar site were found unusuable and likely destroyed in the field by Jacobs Engineering Group Inc.

3. Horizontal Control

3.1 Static Control Network Plot

3.2 Control Survey Data Table

Point ID	Description	State Plane Zone 3 Northing (ft)	State Plane Zone 3 Easting (ft)	Elevation (ft)
551 (FAI A)	Found Brass Cap PACS	3956198.298	1351803.084	431.40
552 (FAI B)	Found Brass Cap SACS	3959156.885	1352843.210	432.22
401	Set 1” mag nail	3959307.482	1350883.342	434.50
402	Set 1” mag nail	3959058.577	1350814.607	435.62
403	Set 1” mag nail	3955468.596	1347116.785	431.84
404	Set 1” mag nail	3955281.777	1346965.012	431.67

4. Survey Data Tables

Field codes used during surveys include:

Code	Description
MW	Monitoring Well
GS	Ground Shot
ITC	Top of Concrete
ITA	Top of Asphalt

4.1 Brooks Fuel Site

Description	State Plane Zone 3 Northing (ft)	State Plane Zone 3 Easting (ft)	Elevation (ft)	Top of PVC Elevation (ft)
MW-2	3959156.142	1351152.631	-	435.61
ITC @ MW-2	3959156.454	1351152.916	435.84	-
MW-5	3959205.899	1351169.487	-	435.41
ITC @ MW-5	3959206.270	1351169.216	435.63	-
MW-8	3959250.422	1351143.662	-	435.82
ITC @ MW-8	3959250.816	1351143.824	436.05	-

4.2 Mark Air Hangar

Description	State Plane Zone 3 Northing (ft)	State Plane Zone 3 Easting (ft)	Elevation (ft)	Top of PVC Elevation (ft)
MW-3B	3955245.276	1346951.381	-	430.77
ITC @ MW-3B	3955244.690	1346951.170	431.47	-
MW-4B	3955338.945	1347194.969	-	434.36
GS @ MW-4	3955338.464	1347194.646	433.52	-
MW-6B	3955468.403	1347322.578	-	431.31
GS @ MW-6B	3955468.859	1347322.011	431.87	-
MW-7B	3955033.867	1347353.361	-	434.58
ITA @ MW-7B	3955033.262	1347353.044	435.10	-
MW-8B	3955189.757	1347130.039	-	434.61
GS @ MW-8B	3955190.225	1347130.364	435.12	-
MW-12	3955323.608	1347392.898	-	435.63
ITA @ MW-12	3955323.481	1347392.545	436.08	-
MW-13	3955255.888	1347546.274	-	434.75
ITC @ MW-13	3955255.435	1347545.900	435.13	-

5.Topography

5.1 RTK Quality Summary Statistics

The following summary statistics were evaluated on the horizontal and vertical RMS of each RTK observation to ensure sufficient data integrity of the processed points. For the full RTK quality report detailing information for each vector, see section 5.2 below.

	H. Precision (usft)	V. Precision (usft)
Average	0.03	0.04
Standard Deviation	0.01	0.01
Minimum	0.01	0.02
Maximum	0.06	0.07
# of Observations	49	

5.2 RTK Quality Full Report

Vector ID	From Point ID	To Point ID	Solution Type	Start Time	H Precision (US survey foot)	V Precision (US survey foot)	Ellip. Dist. (US survey foot)
V1	551	5001	RTK	11/8/2022 13:49	0.018	0.032	3136.132
V2	551	404	RTK	11/8/2022 14:30	0.016	0.026	4924.096
V3	551	404	RTK	11/8/2022 14:32	0.014	0.024	4924.103
V4	551	403	RTK	11/8/2022 14:40	0.017	0.029	4742.764
V5	551	403	RTK	11/8/2022 14:42	0.027	0.047	4742.748
V6	551	403	RTK	11/8/2022 14:44	0.030	0.051	4742.766
V7	551	402	RTK	11/8/2022 14:54	0.015	0.027	3026.315
V8	551	402	RTK	11/8/2022 14:59	0.013	0.024	3026.286
V9	551	401	RTK	11/8/2022 15:06	0.015	0.026	3242.437
V10	551	401	RTK	11/8/2022 15:08	0.012	0.019	3242.411
V11	551	5002	RTK	11/8/2022 16:46	0.022	0.040	3136.150
V12	551	5003	RTK	11/9/2022 9:19	0.021	0.031	3136.089
V13	551	5003	RTK	11/9/2022 9:20	0.018	0.034	3136.112
V14	551	5004	RTK	11/9/2022 10:12	0.023	0.024	3026.268
V15	551	5005	RTK	11/9/2022 10:17	0.018	0.026	3242.387
V16	551	5006	RTK	11/9/2022 10:32	0.024	0.036	3028.535
V17	551	5007	RTK	11/9/2022 10:33	0.024	0.036	3028.778
V18	551	5008	RTK	11/9/2022 10:34	0.026	0.038	3028.627
V19	551	5009	RTK	11/9/2022 10:37	0.028	0.039	3073.630
V20	551	5010	RTK	11/9/2022 10:37	0.027	0.039	3074.049
V21	551	5011	RTK	11/9/2022 10:40	0.030	0.045	3073.744
V22	551	5012	RTK	11/9/2022 10:43	0.027	0.039	3122.562
V23	551	5013	RTK	11/9/2022 10:43	0.027	0.039	3122.914
V24	551	5014	RTK	11/9/2022 10:43	0.027	0.039	3122.566
V25	551	5015	RTK	11/9/2022 11:03	0.022	0.028	4742.773
V26	551	5015	RTK	11/9/2022 11:03	0.023	0.028	4742.774
V27	551	5015	RTK	11/9/2022 11:04	0.023	0.036	4742.767
V28	551	5016	RTK	11/9/2022 11:06	0.024	0.038	4924.099
V29	551	5017	RTK	11/9/2022 11:14	0.026	0.042	4359.899
V30	551	5018	RTK	11/9/2022 11:15	0.026	0.030	4360.362
V31	551	5019	RTK	11/9/2022 11:21	0.023	0.030	4359.776
V32	551	5020	RTK	11/9/2022 11:31	0.053	0.070	4599.575
V33	551	5021	RTK	11/9/2022 11:32	0.053	0.062	4600.035
V34	551	5022	RTK	11/9/2022 11:37	0.056	0.074	4599.537
V35	551	5023	RTK	11/9/2022 11:45	0.028	0.036	4944.436
V36	551	5024	RTK	11/9/2022 11:46	0.029	0.037	4944.757

Continued next page

V37	551	5025	RTK	11/9/2022 11:46	0.030	0.041	4944.346
V38	551	5026	RTK	11/9/2022 11:58	0.026	0.033	4780.656
V39	551	5027	RTK	11/9/2022 11:59	0.027	0.035	4780.240
V40	551	5028	RTK	11/9/2022 11:59	0.027	0.035	4780.581
V41	551	5029	RTK	11/9/2022 12:04	0.029	0.033	4687.577
V42	551	5030	RTK	11/9/2022 12:04	0.035	0.037	4687.983
V43	551	5031	RTK	11/9/2022 12:05	0.029	0.035	4687.531
V44	551	5032	RTK	11/9/2022 12:10	0.045	0.049	4539.586
V45	551	5033	RTK	11/9/2022 12:10	0.036	0.037	4540.071
V46	551	5034	RTK	11/9/2022 12:12	0.038	0.042	4539.506
V47	551	5035	RTK	11/9/2022 12:28	0.031	0.032	4496.107
V48	551	5036	RTK	11/9/2022 12:29	0.029	0.033	4496.477
V49	551	5037	RTK	11/9/2022 12:29	0.028	0.034	4495.860

5.3 RTK Checkshots

From Point	To Point	Δ Horizontal	North Azimuth	Δ Northing	Δ Easting	Δ Vertical
401	5005	0.024 ft	65°27'31.9"	0.010 ft	0.021 ft	-0.025 ft
402	5004	0.013 ft	181°06'00.3"	-0.013 ft	0.000 ft	-0.042 ft
403	5015	0.044 ft	143°05'38.8"	-0.035 ft	0.026 ft	-0.014 ft
404	5016	0.046 ft	113°10'44.5"	-0.018 ft	0.042 ft	-0.050 ft
552 (FAI B)	5001	0.050 ft	310°32'50.1"	0.033 ft	-0.038 ft	-0.002 ft
552 (FAI B)	5002	0.065 ft	323°41'25.9"	0.053 ft	-0.039 ft	0.003 ft
552 (FAI B)	5003	0.015 ft	283°56'39.0"	0.004 ft	-0.014 ft	-0.011 ft

APPENDIX G
Risk Calculation

Site-specific Risk Models
Groundwater Inputs
/HTML"Output to XLS
/HTML"Output to PDF

Variable	Value
LT (lifetime - resident) year	70
K (volatilization factor of Andelman) L/m^3	0.5
l_{sc} (apparent thickness of stratum corneum) cm	0.001
ED_{resw} (exposure duration - resident) year	26
ED_{reswc} (exposure duration - child) year	6
ED_{reswa} (exposure duration - adult) year	20
ED_{0-2} (mutagenic exposure duration first phase) year	2
ED_{2-6} (mutagenic exposure duration second phase) year	4
ED_{6-16} (mutagenic exposure duration third phase) year	10
ED_{16-26} (mutagenic exposure duration fourth phase) year	10
EF_{resw} (exposure frequency) day/year	350
EF_{reswc} (exposure frequency - child) day/year	350
EF_{reswa} (exposure frequency - adult) day/year	350
EF_{0-2} (mutagenic exposure frequency first phase) day/year	350
EF_{2-6} (mutagenic exposure frequency second phase) day/year	350
EF_{6-16} (mutagenic exposure frequency third phase) day/year	350
EF_{16-26} (mutagenic exposure frequency fourth phase) day/year	350
$ET_{resw-adj}$ (age-adjusted exposure time) hour/event	0.67077
$ET_{resw-madj}$ (mutagenic age-adjusted exposure time) hour/event	0.67077
ET_{resw} (exposure time) hour/day	24
ET_{reswc} (dermal exposure time - child) hour/event	0.54
ET_{reswa} (dermal exposure time - adult) hour/event	0.71
ET_{reswc} (inhalation exposure time - child) hour/day	24
ET_{reswa} (inhalation exposure time - adult) hour/day	24
ET_{0-2} (mutagenic inhalation exposure time first phase) hour/day	24
ET_{2-6} (mutagenic inhalation exposure time second phase) hour/day	24
ET_{6-16} (mutagenic inhalation exposure time third phase) hour/day	24
ET_{16-26} (mutagenic inhalation exposure time fourth phase) hour/day	24
ET_{0-2} (mutagenic dermal exposure time first phase) hour/event	0.54
ET_{2-6} (mutagenic dermal exposure time second phase) hour/event	0.54
ET_{6-16} (mutagenic dermal exposure time third phase) hour/event	0.71
ET_{16-26} (mutagenic dermal exposure time fourth phase) hour/event	0.71
BW_{reswa} (body weight - adult) kg	80
BW_{reswc} (body weight - child) kg	15
BW_{0-2} (mutagenic body weight) kg	15
BW_{2-6} (mutagenic body weight) kg	15
BW_{6-16} (mutagenic body weight) kg	80
BW_{16-26} (mutagenic body weight) kg	80
$IFW_{res-adj}$ (adjusted intake factor) L/kg	327.95
$IFWM_{res-adj}$ (mutagenic adjusted intake factor) L/kg	1019.9
IRW_{reswc} (water intake rate - child) L/day	0.78
IRW_{reswa} (water intake rate - adult) L/day	2.5
IRW_{0-2} (mutagenic water intake rate) L/day	0.78
IRW_{2-6} (mutagenic water intake rate) L/day	0.78
IRW_{6-16} (mutagenic water intake rate) L/day	2.5
IRW_{16-26} (mutagenic water intake rate) L/day	2.5
EV_{reswa} (events - adult) per day	1
EV_{reswc} (events - child) per day	1

Site-specific Risk Models
Groundwater Inputs
/HTML"Output to XLS
/HTML"Output to PDF

Variable	Value
$EV_{0\text{-}2}$ (mutagenic events) per day	1
$EV_{2\text{-}6}$ (mutagenic events) per day	1
$EV_{6\text{-}16}$ (mutagenic events) per day	1
$EV_{16\text{-}26}$ (mutagenic events) per day	1
$DFW_{res\text{-}adj}$ (age-adjusted dermal factor) cm^2-event/kg	2610650
$DFWM_{res\text{-}adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	8191633
SA_{reswc} (skin surface area - child) cm^2	6365
SA_{reswa} (skin surface area - adult) cm^2	19652
$SA_{0\text{-}2}$ (mutagenic skin surface area) cm^2	6365
$SA_{2\text{-}6}$ (mutagenic skin surface area) cm^2	6365
$SA_{6\text{-}16}$ (mutagenic skin surface area) cm^2	19652
$SA_{16\text{-}26}$ (mutagenic skin surface area) cm^2	19652

Output generated 15FEB2023:15:34:27

Site-specific Risk Models

Groundwater Cumulative Risk

Groundwater

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL), ca** (Where nc SL < 10 x ca SL),
max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat, sol=SL exceeds Solubility
I=IRIS; D=Drinking Water/Health Advisory Goals; P=PPRTV; A=ATSDR; C=Cal EPA; X=APPENDIX PPRTV SCREEN; H=HEAST; S=SURROGATE; W=RPF

***The sum of PFOS and PFOA concentrations should not exceed 0.07 ug/L.**

Chemical	Mutagen?	Volatile?	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(\mu g/m^3)^{-1}$	IUR Ref	GIABS	MW	log K_{ow}(unitless)	In EPD?	Concentration (µg/L)	Ingestion Noncarcinogenic CDI Child	Inhalation Noncarcinogenic (Volatiles) CDI Child
Chloroform	No	Yes	1.00E-02	I	9.77E-02	A	3.10E-02	C	2.30E-05	I	1.00E+00	1.19E+02	1.97E+00	Yes	1.97E+01	9.82E-04	9.45E-03
Dichloroethane, 1,1-	No	Yes	2.00E-01	P	-		5.70E-03	C	1.60E-06	C	1.00E+00	9.90E+01	1.79E+00	Yes	3.27E+00	1.63E-04	-
Ethylbenzene	No	Yes	1.00E-01	I	1.00E+00	I	1.10E-02	C	2.50E-06	C	1.00E+00	1.06E+02	3.15E+00	Yes	1.01E+01	5.04E-04	4.84E-03
Lead and Compounds	No	No	-		-		-		-		1.00E+00	2.07E+02	-	Yes	1.34E+01	-	-
Naphthalene	No	Yes	2.00E-02	I	3.00E-03	I	-		3.40E-05	C	1.00E+00	1.28E+02	3.30E+00	Yes	5.07E+01	2.53E-03	2.43E-02
Trichloroethylene	Yes	Yes	5.00E-04	I	2.00E-03	I	4.60E-02	I	4.10E-06	I	1.00E+00	1.31E+02	2.42E+00	Yes	3.35E-01	1.67E-05	1.61E-04
Trimethylbenzene, 1,2,4-	No	Yes	1.00E-02	I	6.00E-02	I	-		-		1.00E+00	1.20E+02	3.63E+00	Yes	9.51E+01	4.74E-03	4.56E-02
Trimethylbenzene, 1,3,5-	No	Yes	1.00E-02	I	6.00E-02	I	-		-		1.00E+00	1.20E+02	3.42E+00	Yes	2.91E+01	1.45E-03	1.40E-02
Xylenes	No	Yes	2.00E-01	I	1.00E-01	I	-		-		1.00E+00	1.06E+02	3.16E+00	Yes	1.76E+02	8.78E-03	8.44E-02
**Total Risk/HI*			-		-		-		-		-	-	-		-	-	-

Output generated 15FEB2023:15:34:27

Dermal Noncarcinogenic CDI Child	Ingestion Carcinogenic CDI	Inhalation (Volatiles) Carcinogenic CDI	Dermal Carcinogenic CDI	Ingestion HI Child	Inhalation (Volatiles) HI Child	Dermal HI Child	Noncarcinogenic HI Child	Ingestion Risk	Inhalation (Volatiles) Risk	Dermal Risk	Carcinogenic Risk
7.79E-05	2.53E-04	3.51E+00	2.18E-05	9.82E-02	9.67E-02	7.79E-03	**2.03E-01**	7.84E-06	8.07E-05	6.75E-07	**8.92E-05**
1.12E-05	4.20E-05	5.82E-01	3.13E-06	8.15E-04	-	5.60E-05	**8.71E-04**	2.39E-07	9.32E-07	1.79E-08	**1.19E-06**
2.65E-04	1.30E-04	1.80E+00	7.41E-05	5.04E-03	4.84E-03	2.65E-03	**1.25E-02**	1.43E-06	4.50E-06	8.15E-07	**6.74E-06**
-	-	-	-	-	-	-	**-**	-	-	-	**-**
1.45E-03	6.51E-04	9.03E+00	4.05E-04	1.26E-01	8.10E+00	7.23E-02	**8.30E+00**	-	3.07E-04	-	**3.07E-04**
2.43E-06	6.16E-06	8.54E-02	9.78E-07	3.34E-02	8.03E-02	4.86E-03	**1.19E-01**	2.83E-07	3.50E-07	4.50E-08	**6.78E-07**
4.74E-03	-	-	-	4.74E-01	7.60E-01	4.74E-01	**1.71E+00**	-	-	-	**-**
1.05E-03	-	-	-	1.45E-01	2.33E-01	1.05E-01	**4.83E-01**	-	-	-	**-**
4.68E-03	-	-	-	4.39E-02	8.44E-01	2.34E-02	**9.11E-01**	-	-	-	**-**
-	-	-	-	***9.27E-01***	*1.01E+01*	***6.90E-01***	***1.17E+01***	***9.79E-06***	*3.93E-04*	***1.55E-06***	***4.05E-04***

APPENDIX H
Investigation-derived Waste

MAH Site COCs in Soil and Groundwater

Analyte	Method	ADEC GCL[1] (µg/L)	ADEC SCL[2] (mg/kg)
GRO	AK101	2,200	300
DRO	AK102	1,500	250
RRO	AK103	1,100	11000
Benzene	SW8260D	4.6	0.52
Ethylbenzene	SW8260D	15	0.13
EDB	SW8260D-SIM	0.075	0.00024
TCE	SW8260D	2.8	0.011
Total Xylenes	SW8260D	190	1.5
1-Methylnaphthalene	SW8270D-SIM	11	0.41
2-Methylnaphthalene	SW8270D-SIM	36	1.3
Naphthalene	SW8270D-SIM	1.7	0.038
Lead	SW8260B	15	400

Notes:

[1] 18 AAC 75. Table C human health GCLs (ADEC 2021).

[2] 18 AAC 75. For GRO and DRO, cleanup levels obtained from Table B2, Method Two SCLs, migration to groundwater. For all others, cleanup levels obtained from Table B1, Method Two SCLs, migration to groundwater (ADEC 2021).

For definitions, refer to the Acronyms and Abbreviations section.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
-	AK101	GRO	mg/L	2.2	-		ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]	ND [0.05]
-	AK102	DRO	mg/L	1.5	-		ND [0.306]	0.364 [0.319] J	ND [0.326]	ND [0.326]	-
-	AK103	RRO	mg/L	1.1	-		0.216 [0.255] J	0.317 [0.266] J	ND [0.272]	ND [0.272]	-
7439-92-1	6020B	Lead	mg/L	0.015	5		0.000555 [0.0005] J,B	0.000495 [0.0005] J,B	0.000991 [0.0005] J,B	0.000487 [0.0005] J,B	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/L	0.0057	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
71-55-6	8260D	1,1,1-Trichloroethane	mg/L	8	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/L	0.00076	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
79-00-5	8260D	1,1,2-Trichloroethane	mg/L	0.00041	-		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
75-34-3	8260D	1,1-Dichloroethane	mg/L	0.028	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-35-4	8260D	1,1-Dichloroethene	mg/L	0.28	0.7		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
563-58-6	8260D	1,1-Dichloropropene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-18-4	8260D	1,2,3-TCP	mg/L	0.0000075	-		ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E	ND [0.0005] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/L	0.007	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-63-6	8260D	1,2,4-TMB	mg/L	0.056	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/L	0.004	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/L	-	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
95-50-1	8260D	1,2-Dichlorobenzene	mg/L	0.3	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
107-06-2	8260D	1,2-Dichloroethane	mg/L	0.0017	0.5		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
78-87-5	8260D	1,2-Dichloropropane	mg/L	0.0082	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-67-8	8260D	1,3,5-TMB	mg/L	0.06	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
541-73-1	8260D	1,3-Dichlorobenzene	mg/L	0.3	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
142-28-9	8260D	1,3-Dichloropropane	mg/L	-	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
106-46-7	8260D	1,4-Dichlorobenzene	mg/L	0.0048	7.5		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
594-20-7	8260D	2,2-Dichloropropane	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
95-49-8	8260D	2-Chlorotoluene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
591-78-6	8260D	2-Hexanone	mg/L	0.038	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
106-43-4	8260D	4-Chlorotoluene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/L	6.3	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
71-43-2	8260D	Benzene	mg/L	0.0046	0.5		ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]	ND [0.0002]
108-86-1	8260D	Bromobenzene	mg/L	0.062	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-97-5	8260D	Bromochloromethane	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-27-4	8260D	Bromodichloromethane	mg/L	0.0013	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-25-2	8260D	Bromoform	mg/L	0.033	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
74-83-9	8260D	Bromomethane	mg/L	0.0075	-		ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]	ND [0.003]
75-15-0	8260D	Carbon Disulfide	mg/L	0.81	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
56-23-5	8260D	Carbon Tetrachloride	mg/L	0.0046	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-90-7	8260D	Chlorobenzene	mg/L	0.078	100		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
75-00-3	8260D	Chloroethane	mg/L	21	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
67-66-3	8260D	Chloroform	mg/L	0.0022	6		**0.00336 [0.0005]**	**0.00448 [0.0005]**	**0.00305 [0.0005]**	**0.00797 [0.0005]**	ND [0.0005]
74-87-3	8260D	Chloromethane	mg/L	0.19	-		ND [0.0005]	ND [0.0005]	0.00035 [0.0005] J	0.00038 [0.0005] J	ND [0.0005]
542-75-6	8260D	cis-1,3-Dichloropropene	mg/L	0.0047	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
156-59-2	8260D	cis-DCE	mg/L	0.036	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-82-8	8260D	Cumene	mg/L	0.45	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
124-48-1	8260D	Dibromochloromethane	mg/L	0.0087	-		ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]	ND [0.00025]
74-95-3	8260D	Dibromomethane	mg/L	0.0083	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
106-93-4	8260D	EDB	mg/L	0.000075	-		ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]	ND [0.0000375]
100-41-4	8260D	Ethylbenzene	mg/L	0.015	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-69-4	8260D	Freon-11	mg/L	5.2	-		ND [0.0005]	ND [0.0005]	0.00046 [0.0005] J	ND [0.0005]	ND [0.0005]
-	8260D	Freon-113	mg/L	-	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
75-71-8	8260D	Freon-12	mg/L	0.2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
87-68-3	8260D	Hexachlorobutadiene	mg/L	0.0014	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	m,p-Xylene	mg/L	-	-		ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]	ND [0.001]
78-93-3	8260D	MEK	mg/L	5.6	200		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
75-09-2	8260D	Methylene Chloride	mg/L	0.11	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	0.0468 [0.005]
1634-04-4	8260D	MTBE	mg/L	0.14	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
91-20-3	8260D	Naphthalene	mg/L	0.0017	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
104-51-8	8260D	n-Butylbenzene	mg/L	1	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
-	8260D	o-Xylene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
127-18-4	8260D	PCE	mg/L	0.041	0.7		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
99-87-6	8260D	p-Cymene	mg/L	-	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
103-65-1	8260D	Propylbenzene	mg/L	0.66	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
135-98-8	8260D	sec-Butylbenzene	mg/L	2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
100-42-5	8260D	Styrene	mg/L	1.2	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
79-01-6	8260D	TCE	mg/L	0.0028	0.5		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
98-06-6	8260D	tert-Butylbenzene	mg/L	0.69	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
108-88-3	8260D	Toluene	mg/L	1.1	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
542-75-6	8260D	trans-1,3-Dichloropropene	mg/L	0.0047	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
156-60-5	8260D	trans-DCE	mg/L	0.36	-		ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0005]
75-01-4	8260D	VC	mg/L	0.00019	0.2		ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]	ND [0.000075]
108-05-4	8260D	Vinyl Acetate	mg/L	0.41	-		ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]	ND [0.005]
1330-20-7	8260D	Xylenes	mg/L	0.19	-		ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]	ND [0.0015]
106-93-4	8260D-SIM	EDB	mg/L	0.000075	-		ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]	ND [0.0000025]
90-12-0	8270DSIM	1-Methylnaphthalene	mg/L	0.011	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
91-57-6	8270DSIM	2-Methylnaphthalene	mg/L	0.036	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	0.0000169 [0.0000272] J	-
83-32-9	8270DSIM	Acenaphthene	mg/L	0.53	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
208-96-8	8270DSIM	Acenaphthylene	mg/L	0.26	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
120-12-7	8270DSIM	Anthracene	mg/L	0.043	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
56-55-3	8270DSIM	Benzo(a)anthracene	mg/L	0.0003	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
50-32-8	8270DSIM	Benzo(a)pyrene	mg/L	0.00025	-		ND [0.00001]	ND [0.0000102]	ND [0.0000107]	ND [0.0000109]	-
205-99-2	8270DSIM	Benzo(b)fluoranthene	mg/L	0.0025	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
191-24-2	8270DSIM	Benzo(g,h,i)perylene	mg/L	0.00026	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
207-08-9	8270DSIM	Benzo(k)fluoranthene	mg/L	0.0008	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
218-01-9	8270DSIM	Chrysene	mg/L	0.002	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
53-70-3	8270DSIM	Dibenzo(a,h)anthracene	mg/L	0.00025	-		ND [0.00001]	ND [0.0000102]	ND [0.0000107]	ND [0.0000109]	-
206-44-0	8270DSIM	Fluoranthene	mg/L	0.26	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
86-73-7	8270DSIM	Fluorene	mg/L	0.29	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
193-39-5	8270DSIM	Indeno(1,2,3-cd)pyrene	mg/L	0.00019	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
91-20-3	8270DSIM	Naphthalene	mg/L	0.0017	-		ND [0.00005]	ND [0.000051]	ND [0.000053]	ND [0.0000545]	-
85-01-8	8270DSIM	Phenanthrene	mg/L	0.17	-		ND [0.00005]	ND [0.000051]	ND [0.000053]	ND [0.0000545]	-
129-00-0	8270DSIM	Pyrene	mg/L	0.12	-		ND [0.000025]	ND [0.0000255]	ND [0.0000266]	ND [0.0000272]	-
757124-72-4	EPA 537M BY ID	4:2 Fluorotelomer sulfonate	mg/L	-	-		ND [0.000011]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
27619-97-2	EPA 537M BY ID	6:2 Fluorotelomer sulfonate	mg/L	-	-		0.0000061 [0.000011] J	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
39108-34-4	EPA 537M BY ID	8:2 Fluorotelomer sulfonate	mg/L	-	-		ND [0.000011]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2991-50-6	EPA 537M BY ID	EtFOSAA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2355-31-9	EPA 537M BY ID	MeFOSAA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
335-77-3	EPA 537M BY ID	Perfluorodecanesulfonic acid	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
68259-12-1	EPA 537M BY ID	Perfluorononanesulfonic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
2706-91-4	EPA 537M BY ID	Perfluoropentanesulfonic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	0.000004 [0.0000067] J	ND [0.000028]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.5 Wastewater Sample Results

						Location ID:	DR01	DR02	DR03	DR04	TB03W
						Sample ID:	22MAH-DR01-WW	22MAH-DR02-WW	22MAH-DR03-WW	22MAH-DR04-WW	22MAH-TB03W
						SDG:	1226337	1226337	1226337	1226337	1226337
						Lab Sample ID:	1226337001	1226337002	1226337003	1226337004	1226337005
						Sample Date/Time:	10/13/2022 10:40:00	10/13/2022 11:50:00	10/13/2022 12:30:00	10/13/2022 13:00:00	10/13/2022 08:00:00
						Laboratory:	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental	SGS Environmental
						QA/QC:	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**GCL[1]**	**RCRA TCLP[2]**						
2706-90-3	EPA 537M BY ID	Perfluoropentanoic acid	mg/L	-	-		0.0000108 [0.0000056] J	0.0000095 [0.000005] J	0.0000071 [0.0000067] J	ND [0.000028]	-
376-06-7	EPA 537M BY ID	Perfluorotetradecanoic acid	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
72629-94-8	EPA 537M BY ID	Perfluorotridecanoic acid	mg/L	-	-		ND [0.000028]	ND [0.000025]	ND [0.0000067]	ND [0.000028]	-
375-22-4	EPA 537M BY ID	PFBA	mg/L	-	-		0.0000276 [0.000011]	0.0000078 [0.00001] J	0.000011 [0.000013] J	ND [0.000056]	-
375-73-5	EPA 537M BY ID	PFBS	mg/L	-	-		ND [0.0000056]	0.0000197 [0.000005]	0.0000105 [0.0000067] J	ND [0.000028]	-
335-76-2	EPA 537M BY ID	PFDA	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
307-55-1	EPA 537M BY ID	PFDoA	mg/L	-	-		ND [0.000028]	ND [0.000025]	ND [0.0000067]	ND [0.000028]	-
375-85-9	EPA 537M BY ID	PFHpA	mg/L	-	-		0.0000065 [0.0000056] J	0.0000067 [0.000005] J	0.0000046 [0.0000067] J	ND [0.000028]	-
375-92-8	EPA 537M BY ID	PFHPS	mg/L	-	-		ND [0.0000056]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-
307-24-4	EPA 537M BY ID	PFHxA	mg/L	-	-		0.0000189 [0.0000056]	0.0000105 [0.000005]	0.00001 [0.0000067] J	ND [0.000028]	-
355-46-4	EPA 537M BY ID	PFHxS	mg/L	-	-		0.0000316 [0.0000056]	0.0000508 [0.000005]	0.0000255 [0.0000067]	0.0000506 [0.000028] J	-
375-95-1	EPA 537M BY ID	PFNA	mg/L	-	-		0.0000106 [0.0000056] J	0.0000059 [0.000005] J	0.0000094 [0.0000067] J	ND [0.000028]	-
335-67-1	EPA 537M BY ID	PFOA	mg/L	0.0004	-		0.000009 [0.0000056] J	0.0000159 [0.000005]	0.000009 [0.0000067] J	ND [0.000028]	-
1763-23-1	EPA 537M BY ID	PFOS	mg/L	0.0004	-		0.0000343 [0.0000056]	0.0000176 [0.000005]	0.0000114 [0.0000067] J	0.0000176 [0.000028] J	-
754-91-6	EPA 537M BY ID	PFOSA	mg/L	-	-		ND [0.000056]	ND [0.00001]	ND [0.000013]	ND [0.000056]	-
2058-94-8	EPA 537M BY ID	PFUnA	mg/L	-	-		ND [0.000028]	ND [0.000005]	ND [0.0000067]	ND [0.000028]	-

Notes:

[1] 18 AAC 75. Table C Groundwater Human Health Cleanup Levels (ADEC 2021)
[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.
Bold = Result exceeds ADEC Groundwater Human Health Levels.
Bold = The result exceeds RCRA TCLP.
– = no criteria/not analyzed
[ ] = limit of detection (LOD)
CAS = Chemical Abstracts Service
GCL/SCL = groundwater/soil cleanup level
ID = identification
mg/L = milligram(s) per liter
ND = nondetect
QA/QC = quality assurance/quality control
RCRA = Resource Conservation Recovery Act
SDG = sample delivery group
TCLP = Toxicity Characteristic Leaching Procedure
J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.
E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.
B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
-	A2540G	Total Solids	Percent	-	-	87.2	-
-	AK101	GRO	mg/kg	300	-	2.8 [3.31] J,B	1.17 [1.26] J,B
-	AK102	DRO	mg/kg	250	-	ND [11.4]	-
-	AK103	RRO	mg/kg	10000	-	79.3 [57] J	-
7439-92-1	6020B	Lead	mg/kg	400	100	8.98 [0.115]	-
630-20-6	8260D	1,1,1,2-Tetrachloroethane	mg/kg	0.022	-	ND [0.0265] E	ND [0.0101]
71-55-6	8260D	1,1,1-Trichloroethane	mg/kg	32	-	ND [0.0331]	ND [0.0126]
79-34-5	8260D	1,1,2,2-Tetrachloroethane	mg/kg	0.003	-	ND [0.00265]	ND [0.001]
79-00-5	8260D	1,1,2-Trichloroethane	mg/kg	0.0014	-	ND [0.00133]	ND [0.000505]
75-34-3	8260D	1,1-Dichloroethane	mg/kg	0.092	-	ND [0.0331]	ND [0.0126]
75-35-4	8260D	1,1-Dichloroethene	mg/kg	1.2	14	ND [0.0331]	ND [0.0126]
563-58-6	8260D	1,1-Dichloropropene	mg/kg	-	-	ND [0.0331]	ND [0.0126]
96-18-4	8260D	1,2,3-TCP	mg/kg	0.000031	-	ND [0.00265] E	ND [0.001] E
87-61-6	8260D	1,2,3-Trichlorobenzene	mg/kg	0.15	-	ND [0.133]	ND [0.0505]
95-63-6	8260D	1,2,4-TMB	mg/kg	0.61	-	ND [0.133]	ND [0.0505]
120-82-1	8260D	1,2,4-Trichlorobenzene	mg/kg	0.082	-	ND [0.0331]	ND [0.0126]
96-12-8	8260D	1,2-Dibromo-3-chloropropane	mg/kg	0.0053	-	ND [0.133] E	ND [0.0505] E
95-50-1	8260D	1,2-Dichlorobenzene	mg/kg	2.4	-	ND [0.0331]	ND [0.0126]
107-06-2	8260D	1,2-Dichloroethane	mg/kg	0.0055	10	ND [0.00265]	ND [0.001]
78-87-5	8260D	1,2-Dichloropropane	mg/kg	0.03	-	ND [0.0133]	ND [0.00505]
108-67-8	8260D	1,3,5-TMB	mg/kg	0.66	-	ND [0.0331]	ND [0.0126]
541-73-1	8260D	1,3-Dichlorobenzene	mg/kg	2.3	-	ND [0.0331]	ND [0.0126]
142-28-9	8260D	1,3-Dichloropropane	mg/kg	1600	-	ND [0.0133]	ND [0.00505]
106-46-7	8260D	1,4-Dichlorobenzene	mg/kg	0.037	150	ND [0.0331]	ND [0.0126]
594-20-7	8260D	2,2-Dichloropropane	mg/kg	-	-	ND [0.0331]	ND [0.0126]
95-49-8	8260D	2-Chlorotoluene	mg/kg	1600	-	ND [0.0331]	ND [0.0126]
591-78-6	8260D	2-Hexanone	mg/kg	0.11	-	ND [0.159] E	ND [0.0605]
106-43-4	8260D	4-Chlorotoluene	mg/kg	1600	-	ND [0.0265]	ND [0.0101]
108-10-1	8260D	4-Methyl-2-Pentanone	mg/kg	18	-	ND [0.332]	ND [0.126]
67-64-1	8260D	Acetone	mg/kg	38	-	ND [0.332]	ND [0.126]
71-43-2	8260D	Benzene	mg/kg	0.022	10	ND [0.0166]	ND [0.0063]
108-86-1	8260D	Bromobenzene	mg/kg	0.36	-	ND [0.0331]	ND [0.0126]
74-97-5	8260D	Bromochloromethane	mg/kg	150	-	ND [0.0331]	ND [0.0126]
75-27-4	8260D	Bromodichloromethane	mg/kg	0.0043	-	ND [0.00265]	ND [0.001]
75-25-2	8260D	Bromoform	mg/kg	0.1	-	ND [0.0331]	ND [0.0126]
74-83-9	8260D	Bromomethane	mg/kg	0.024	-	ND [0.0265] E	ND [0.0101]
75-15-0	8260D	Carbon Disulfide	mg/kg	2.9	-	ND [0.133]	ND [0.0505]
56-23-5	8260D	Carbon Tetrachloride	mg/kg	0.021	10	ND [0.0166]	ND [0.0063]
108-90-7	8260D	Chlorobenzene	mg/kg	0.46	2000	ND [0.0331]	ND [0.0126]
75-00-3	8260D	Chloroethane	mg/kg	72	-	ND [0.265]	ND [0.101]
67-66-3	8260D	Chloroform	mg/kg	0.0071	120	ND [0.00795] E	ND [0.00302]
74-87-3	8260D	Chloromethane	mg/kg	0.61	-	ND [0.0331]	ND [0.0126]
-	8260D	cis-1,3-Dichloropropene	mg/kg	-	-	ND [0.0166]	ND [0.0063]
156-59-2	8260D	cis-DCE	mg/kg	0.12	-	ND [0.0331]	ND [0.0126]
98-82-8	8260D	Cumene	mg/kg	5.6	-	ND [0.0331]	ND [0.0126]
124-48-1	8260D	Dibromochloromethane	mg/kg	0.0027	-	ND [0.00665] E	ND [0.00252]
74-95-3	8260D	Dibromomethane	mg/kg	0.025	-	ND [0.0331] E	ND [0.0126]
106-93-4	8260D	EDB	mg/kg	0.00024	-	ND [0.00199] E	ND [0.000755] E
100-41-4	8260D	Ethylbenzene	mg/kg	0.13	-	ND [0.0331]	ND [0.0126]
75-69-4	8260D	Freon-11	mg/kg	41	-	ND [0.0665]	ND [0.0252]
-	8260D	Freon-113	mg/kg	-	-	ND [0.133]	ND [0.0505]
75-71-8	8260D	Freon-12	mg/kg	3.9	-	ND [0.133]	ND [0.0505]
87-68-3	8260D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.0265] E	ND [0.0101]
-	8260D	m,p-Xylene	mg/kg	-	-	ND [0.0665]	ND [0.0252]
78-93-3	8260D	MEK	mg/kg	15	4000	ND [0.332]	ND [0.126]
75-09-2	8260D	Methylene Chloride	mg/kg	0.33	-	ND [0.133]	ND [0.0505]
1634-04-4	8260D	MTBE	mg/kg	0.4	-	ND [0.133]	ND [0.0505]
91-20-3	8260D	Naphthalene	mg/kg	0.038	-	ND [0.0331]	ND [0.0126]
104-51-8	8260D	n-Butylbenzene	mg/kg	20	-	ND [0.0331]	ND [0.0126]
-	8260D	o-Xylene	mg/kg	-	-	ND [0.0331]	ND [0.0126]
127-18-4	8260D	PCE	mg/kg	0.19	14	ND [0.0166]	ND [0.0063]
99-87-6	8260D	p-Cymene	mg/kg	-	-	ND [0.106]	ND [0.0403]
103-65-1	8260D	Propylbenzene	mg/kg	9.1	-	ND [0.0331]	ND [0.0126]
135-98-8	8260D	sec-Butylbenzene	mg/kg	28	-	ND [0.0331]	ND [0.0126]
100-42-5	8260D	Styrene	mg/kg	10	-	ND [0.0331]	ND [0.0126]
79-01-6	8260D	TCE	mg/kg	0.011	10	ND [0.0133] E	ND [0.00505]
98-06-6	8260D	tert-Butylbenzene	mg/kg	11	-	ND [0.0331]	ND [0.0126]
108-88-3	8260D	Toluene	mg/kg	6.7	-	ND [0.0331]	ND [0.0126]

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
542-75-6	8260D	trans-1,3-Dichloropropene	mg/kg	0.018	-	ND [0.0166]	ND [0.0063]
156-60-5	8260D	trans-DCE	mg/kg	1.3	-	ND [0.0331]	ND [0.0126]
75-01-4	8260D	VC	mg/kg	0.0008	4	ND [0.00106] E	ND [0.000403]
108-05-4	8260D	Vinyl Acetate	mg/kg	1.1	-	ND [0.133]	ND [0.0505]
1330-20-7	8260D	Xylenes	mg/kg	1.5	-	ND [0.0995]	ND [0.0378]
106-93-4	8260D-SIM	EDB	mg/kg	0.00024	-	ND [0.000166]	ND [0.000063]
120-82-1	8270D	1,2,4-Trichlorobenzene	mg/kg	0.082	-	ND [0.284] E	-
95-50-1	8270D	1,2-Dichlorobenzene	mg/kg	2.4	-	ND [0.284]	-
541-73-1	8270D	1,3-Dichlorobenzene	mg/kg	2.3	-	ND [1.14]	-
106-46-7	8270D	1,4-Dichlorobenzene	mg/kg	0.037	150	ND [0.284] E	-
-	8270D	1-Chloronaphthalene	mg/kg	-	-	ND [0.284]	-
90-12-0	8270D	1-Methylnaphthalene	mg/kg	0.41	-	ND [0.284]	-
95-95-4	8270D	2,4,5-Trichlorophenol	mg/kg	28	8000	ND [0.284]	-
88-06-2	8270D	2,4,6-Trichlorophenol	mg/kg	0.092	40	ND [1.14] E	-
120-83-2	8270D	2,4-Dichlorophenol	mg/kg	0.21	-	ND [0.284] E	-
105-67-9	8270D	2,4-Dimethylphenol	mg/kg	3.2	-	ND [0.57]	-
51-28-5	8270D	2,4-Dinitrophenol	mg/kg	0.34	-	ND [5.7] E	-
121-14-2	8270D	2,4-DNT	mg/kg	0.024	2.6	ND [0.284] E	-
-	8270D	2,6-Dichlorophenol	mg/kg	-	-	ND [0.284]	-
606-20-2	8270D	2,6-DNT	mg/kg	0.005	-	ND [0.284] E	-
91-58-7	8270D	2-Chloronaphthalene	mg/kg	26	-	ND [0.284]	-
95-57-8	8270D	2-Chlorophenol	mg/kg	0.71	-	ND [0.284]	-
91-57-6	8270D	2-Methylnaphthalene	mg/kg	1.3	-	ND [0.284]	-
95-48-7	8270D	2-Methylphenol	mg/kg	6.2	4000	ND [0.284]	-
88-74-4	8270D	2-Nitroaniline	mg/kg	630	-	ND [0.284]	-
88-75-5	8270D	2-Nitrophenol	mg/kg	-	-	ND [0.284]	-
91-94-1	8270D	3,3'-Dichlorobenzidine	mg/kg	0.056	-	ND [1.14] E	-
99-09-2	8270D	3-Nitroaniline	mg/kg	-	-	ND [0.57]	-
534-52-1	8270D	4,6-Dinitro-2-methylphenol	mg/kg	5.1	-	ND [2.27]	-
101-55-3	8270D	4-Bromophenyl Phenyl Ether	mg/kg	-	-	ND [0.284]	-
59-50-7	8270D	4-Chloro-3-Methylphenol	mg/kg	6300	-	ND [0.284]	-
106-47-8	8270D	4-Chloroaniline	mg/kg	0.015	-	ND [1.14] E	-
7005-72-3	8270D	4-Chlorophenyl Phenyl Ether	mg/kg	-	-	ND [0.284]	-
100-01-6	8270D	4-Nitroaniline	mg/kg	27	-	ND [3.42]	-
-	8270D	4-Nitrophenol	mg/kg	-	-	ND [2.27]	-
83-32-9	8270D	Acenaphthene	mg/kg	37	-	ND [0.284]	-
208-96-8	8270D	Acenaphthylene	mg/kg	18	-	ND [0.284]	-
-	8270D	Aniline	mg/kg	-	-	ND [4.55]	-
120-12-7	8270D	Anthracene	mg/kg	390	-	ND [0.284]	-
-	8270D	Azobenzene	mg/kg	-	-	ND [0.284]	-
56-55-3	8270D	Benzo(a)anthracene	mg/kg	0.7	-	ND [0.284]	-
50-32-8	8270D	Benzo(a)pyrene	mg/kg	1.5	-	ND [0.284]	-
205-99-2	8270D	Benzo(b)fluoranthene	mg/kg	15	-	ND [0.284]	-
191-24-2	8270D	Benzo(g,h,i)perylene	mg/kg	2300	-	ND [0.284]	-
207-08-9	8270D	Benzo(k)fluoranthene	mg/kg	150	-	ND [0.284]	-
65-85-0	8270D	Benzoic Acid	mg/kg	200	-	ND [1.71]	-
100-51-6	8270D	Benzyl Alcohol	mg/kg	5.7	-	ND [0.284]	-
85-68-7	8270D	Benzyl Butyl Phthalate	mg/kg	16	-	ND [0.284]	-
111-91-1	8270D	bis(2-Chlorethoxy)methane	mg/kg	190	-	ND [2.27]	-
-	8270D	bis(2-Chloroethyl) Ether	mg/kg	-	-	ND [0.284]	-
108-60-1	8270D	bis(2-Chloroisopropyl) Ether	mg/kg	3100	-	ND [0.284]	-
117-81-7	8270D	bis(2-Ethylhexyl)phthalate	mg/kg	88	-	0.295 [0.284] J,B	-
-	8270D	Carbazole	mg/kg	-	-	ND [0.284]	-
218-01-9	8270D	Chrysene	mg/kg	600	-	ND [0.284]	-
53-70-3	8270D	Dibenzo(a,h)anthracene	mg/kg	1.5	-	ND [0.284]	-
132-64-9	8270D	Dibenzofuran	mg/kg	0.97	-	ND [0.284]	-
84-74-2	8270D	Dibutyl Phthalate	mg/kg	16	-	0.215 [0.284] J,B	-
84-66-2	8270D	Diethyl Phthalate	mg/kg	60	-	ND [0.284]	-
131-11-3	8270D	Dimethyl Phthalate	mg/kg	48	-	ND [0.284]	-
117-84-0	8270D	Di-n-octyl Phthalate	mg/kg	370	-	ND [0.57]	-
206-44-0	8270D	Fluoranthene	mg/kg	590	-	ND [0.284]	-
86-73-7	8270D	Fluorene	mg/kg	36	-	ND [0.284]	-
118-74-1	8270D	Hexachlorobenzene	mg/kg	0.0082	2.6	ND [0.284] E	-
87-68-3	8270D	Hexachlorobutadiene	mg/kg	0.02	10	ND [0.284] E	-
77-47-4	8270D	Hexachlorocyclopentadiene	mg/kg	0.0093	-	ND [0.795] E	-
67-72-1	8270D	Hexachloroethane	mg/kg	0.018	60	ND [0.284] E	-
193-39-5	8270D	Indeno(1,2,3-cd)pyrene	mg/kg	15	-	ND [0.284]	-
78-59-1	8270D	Isophorone	mg/kg	2.7	-	ND [0.284]	-

2022 MarkAir Warehouse Groundwater Monitoring – Fairbanks International Airport, Fairbanks, Alaska
Table F.6 Soil Waste Sample Results

					Location ID:	DR-SO	TB
					Sample ID:	22MAH-DR-SO	Trip Blank
					SDG:	1226513	1226513
					Lab Sample ID:	1226513001	1226513002
					Sample Date/Time:	10/20/2022 15:55:00	10/20/2022 00:00:00
					Laboratory:	SGS Environmental	SGS Environmental
					QA/QC:	Primary Sample	Trip Blank
CAS Number	**Method**	**Analyte**	**Units**	**SCL[1]**	**RCRA 20 Times TCLP[2]**		
-	8270D	m,p-Cresol	mg/kg	-	-	ND [1.14]	-
91-20-3	8270D	Naphthalene	mg/kg	0.038	-	ND [0.284] E	-
98-95-3	8270D	Nitrobenzene	mg/kg	0.0079	40	ND [0.284] E	-
62-75-9	8270D	n-Nitrosodimethylamine	mg/kg	0.0000033	-	ND [0.284] E	-
621-64-7	8270D	n-Nitrosodi-n-propylamine	mg/kg	0.00068	-	ND [0.284] E	-
86-30-6	8270D	n-Nitrosodiphenylamine	mg/kg	4.6	-	ND [0.284]	-
87-86-5	8270D	Pentachlorophenol	mg/kg	0.0043	2000	ND [4.55] E	-
85-01-8	8270D	Phenanthrene	mg/kg	39	-	ND [0.284]	-
108-95-2	8270D	Phenol	mg/kg	29	-	ND [0.284]	-
129-00-0	8270D	Pyrene	mg/kg	87	-	ND [0.284]	-
757124-72-4	EPA 537M BY ID	4:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
27619-97-2	EPA 537M BY ID	6:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
39108-34-4	EPA 537M BY ID	8:2 Fluorotelomer sulfonate	mg/kg	-	-	ND [0.00059]	-
2991-50-6	EPA 537M BY ID	EtFOSAA	mg/kg	-	-	ND [0.0012]	-
2355-31-9	EPA 537M BY ID	MeFOSAA	mg/kg	-	-	ND [0.0012]	-
335-77-3	EPA 537M BY ID	Perfluorodecanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
68259-12-1	EPA 537M BY ID	Perfluorononanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
2706-91-4	EPA 537M BY ID	Perfluoropentanesulfonic acid	mg/kg	-	-	ND [0.00059]	-
2706-90-3	EPA 537M BY ID	Perfluoropentanoic acid	mg/kg	-	-	ND [0.00059]	-
376-06-7	EPA 537M BY ID	Perfluorotetradecanoic acid	mg/kg	-	-	ND [0.00059]	-
72629-94-8	EPA 537M BY ID	Perfluorotridecanoic acid	mg/kg	-	-	ND [0.00059]	-
375-22-4	EPA 537M BY ID	PFBA	mg/kg	-	-	ND [0.00059]	-
375-73-5	EPA 537M BY ID	PFBS	mg/kg	-	-	ND [0.00059]	-
335-76-2	EPA 537M BY ID	PFDA	mg/kg	-	-	ND [0.00059]	-
307-55-1	EPA 537M BY ID	PFDoA	mg/kg	-	-	ND [0.00059]	-
375-85-9	EPA 537M BY ID	PFHpA	mg/kg	-	-	ND [0.00059]	-
375-92-8	EPA 537M BY ID	PFHPS	mg/kg	-	-	ND [0.00059]	-
307-24-4	EPA 537M BY ID	PFHxA	mg/kg	-	-	ND [0.00059]	-
355-46-4	EPA 537M BY ID	PFHxS	mg/kg	-	-	ND [0.00059]	-
375-95-1	EPA 537M BY ID	PFNA	mg/kg	-	-	ND [0.00059]	-
335-67-1	EPA 537M BY ID	PFOA	mg/kg	0.0017	-	ND [0.00059]	-
1763-23-1	EPA 537M BY ID	PFOS	mg/kg	0.003	-	ND [0.00059]	-
754-91-6	EPA 537M BY ID	PFOSA	mg/kg	-	-	ND [0.00059]	-
2058-94-8	EPA 537M BY ID	PFUnA	mg/kg	-	-	ND [0.00059]	-

Notes:

[1] ADEC Table B1 and B2, Most stringent of Human Health (Under 40 inch zone) and migration to groundwater (ADEC 2021).

[2] 40 CFR 261, Appendix II, 1993 ed., as amended by 58 FR 46040, August 31, 1993.

Bold = Result exceeds ADEC Most Stringent.

Bold = The result exceeds RCRA 20 Times TCLP.

– = no criteria/not analyzed

[ ] = limit of detection (LOD)

ID = identification

mg/kg = milligram(s) per kilogram

ND = nondetect

QA/QC = quality assurance/quality control

SDG = sample delivery group

J = The result is an estimated value because it was greater than the DL but less than the limit of quantitation.

E = The result was nondetect (ND) and the limit of detection (LOD) exceeds the GCL or SCL.

B = The analyte was detected in the method blank, trip blank or equipment blank and the concentration in the sample did not exceed the blank concentration by a factor of 5.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites and Prevention Preparedness and Response Programs

Contaminated Media Transport and Treatment or Disposal Approval Form

HAZARD ID # or SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL	
24293	MarkAir Hangar Site	
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION		
5525 Airport Industrial Road, Fairbanks Alaska 99709		
CURRENT PHYSICAL LOCATION OF MEDIA	**SOURCE OF THE CONTAMINATION (DAY TANK, FIRE TRAINING PIT, LUST, ETC.)**	
FAI warm storage facility (Building 50) Sample Purge Water	Leaking underground storage tanks	
CONTAMINANTS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
Please refer to the attached waste characterization report.	155 gals water/9.82 ft3 soil	August 18-31, 2022
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*		
N/A Per US Ecology Alaska discharge permit		
COMMENTS OR OTHER IMPORTANT INFORMATION		
Waste characterization completed (attached). Wastewater - 22MAH-DR01-WW, 22MAH-DR02-WW, 22MAH-DR03-WW, 22MAH-DR04-WW. Waste Soil - 22MAH-DR-SO		

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
US Ecology	2020 Viking Dr. Anchorage AK 99501/907-222-5238
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
ADOT FAI	6450 Airport Way Ste 1 Fairbanks AK 99709/907-474-2598
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**
US Ecology	1315 Queens Way, Fairbanks AK 99701/907-328-7025

***Note, disposal of polluted soil in a landfill requires prior approval from the landfill operator and ADEC Solid Waste Program.**

Elise N. Thomas
Name of the Person Requesting Approval (printed)

Environmental Manager
Title/Association

Elise N. Thomas Digitally signed by Elise N. Thomas Date: 2023.05.04 15:08:34 -08'00'
Signature

5/4/2023
Date

9074742598
Phone Number

----------**DEC USE ONLY**----------

Based on the information provided, ADEC approves transport of the above mentioned material. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight receipts of the loads transported and a post treatment analytical report, if disposed of at an approved treatment facility. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

Rebekah Reams
DEC Project Manager Name (printed)

Environmental Program Specialist III
Project Manager Title

Rebekah Reams Digitally signed by Rebekah Reams Date: 2023.05.04 15:24:58 -08'00'
Signature

5/4/2023
Date

(907) 451-2144
Phone Number

DEC Comments to *MarkAir Hangar Site Characterization Report* for MarkAir - FIA Main Facility (Hanger)

ADEC File No: 100.26.043 **Hazard ID:** 24293

Reviewer: Rebekah Reams, Alaska Department of Environmental Conservation, Contaminated Sites Program
Response: Jacobs on behalf of FIA **Dated**: January 26, 2024

Comment No.	Pg. #	Section	Comment / Recommendations	Response
1.	1-10	1.4 Soil and Groundwater Screening Levels	Typo: Table 1-1 indicates the migration to groundwater soil cleanup level for benzene is 0.52 mg/kg. Please update this table to reflect the current benzene cleanup level of 0.022 mg/kg.	Accepted; Table 1-1 has been updated with current benzene cleanup level of 0.022 mg/kg.
2.	2-3	2.2 Soil Borings and Sampling	This section of the report indicates that one duplicate soil sample was collected for 12 project samples; however, the sample data provided indicates that two field duplicate pairs were submitted (SB7b-SO10-10.5/SB7b-SO10-10.5A and SB8b-SO10-10.5/SB8b-SO10-10.5A). Please verify this information and update as necessary.	Accepted; Section 2.2 has been updated to reflect that two field duplicate pairs were submitted for soil samples.
3.		Appendix C	Many pages of lab data provided in Appendix C contain formatting issues. Please re-attach these lab reports to resolve the formatting issues or provide separate copies of lab data for DEC records.	Accepted; lab reports were removed and appended without downsizing, which may have caused the formatting issues. Each page was checked for errors and revised with dated comments.
4.		Appendix D: CSM	Please note that while no soil cleanup level exceedances were observed during this sampling event, DEC considers soil to be an impacted media and a potential future exposure pathway due to former cleanup level exceedances observed in soils underneath current site infrastructure.	Accepted; changed the soil pathway to “complete” in the Appendix D: CSM forms and graphic. Added this note from ADEC to CSM form text box.