DEPARTMENT OF THE AIR FORCE
377TH AIR BASE WING (AFGSC)

12 July 2021

Colonel Jason F. Vattioni, USAF
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377th Air Base Wing
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Mr. Ricardo Maestas
Acting Hazardous Waste Bureau (HWB) Chief
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Dear Mr. Maestas

Attached, please find the *Periodic Monitoring Report for January – March 2021 for the Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, New Mexico,* dated July 2021. This report summarizes groundwater monitoring and interim measure activities associated with the distal plume capture and treatment system at Solid Waste Management Units ST-106/SS-111.

If you have any questions or concerns, please contact Mr. Ryan Wortman at commercial line (505) 853-3484 or email ryan.wortman.3@us.af.mil.

Sincerely

JASON F. VATTIONI, Colonel, USAF
Commander

Attachments:
Periodic Monitoring Report for January – March 2021, Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, New Mexico, dated July 2021

cc:
NMED HWB (Maestas, Andress), two hard copies and two CDs
NMED HWB (Cobrain, Wear), letter and CD
NMED RPD (Catechis), letter and CD
NMED GWQB (Hunter, Romero), letter and CD
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KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO

PERIODIC MONITORING REPORT – JANUARY–MARCH 2021
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

JULY 2021

377 MSG/CEI
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KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO

Periodic Monitoring Report – January–March 2021
Bulk Fuels Facility
Solid Waste Management Units ST-106/SS-111
Kirtland Air Force Base, New Mexico

July 2021

Prepared for
Kirtland Air Force Base
2050 Wyoming Boulevard SE
Kirtland Air Force Base, New Mexico 87117-5270

Prepared by
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U.S. Army Corps of Engineers Contract No. W912PP20C0020

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14. ABSTRACT

This Periodic Monitoring Report was prepared in accordance with Part 6.2.4.4 of the Kirtland Air Force Base (AFB) Resource Conservation and Recovery Act (RCRA) Hazardous Waste Treatment Facility Operating Permit (Permit Number NM9570024423 [RCRA Permit]) (New Mexico Environment Department, 2010). This report describes monitoring activities performed from January 1 through March 31, 2021, at Solid Waste Management Units ST-106/ SS-111, the Bulk Fuels Facility site, at Kirtland AFB, New Mexico. During this quarter, groundwater, drinking water from supply wells, and the groundwater treatment system (GWTS) samples were collected and analyzed for contaminants of potential concern, notably 1,2-dibromoethane (ethylene dibromide [EDB]), and other relevant field and laboratory parameters in accordance with the applicable provisions in Part 6.5 of the RCRA Permit. In this quarter, 55,603,200 gallons of groundwater were extracted and treated in the GWTS using a granular activated carbon filtration system; the treated effluent was discharged to the Tijeras Arroyo Golf Course main pond and injection wells KAFB-7 and KAFB-106IN2. During this quarter, the GWTS was operational for 93.3 percent of the time and removed approximately 1.03 grams of EDB.

15. SUBJECT TERMS

Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, ethylene dibromide, 1,2-dibromoethane, EDB, interim measure, RCRA, groundwater sampling, groundwater treatment system operation, granular activated carbon

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JASON F. VATTIONI, Colonel, U.S. Air Force
Commander, 377th Air Base Wing

12 July 2021
Date

This document has been approved for public release.

KIRTLAND AIR FORCE BASE
377th Air Base Wing Public Affairs

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PREFACE

This Periodic Monitoring Report for January–March 2021 has been prepared by EA Engineering, Science, and Technology, Inc., PBC (EA) for Kirtland Air Force Base (AFB) under the U.S. Army Corps of Engineers Contract Number W912PP-20-C-0020. The report addresses activities at the Kirtland AFB Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, located in Albuquerque, New Mexico.

The report contains data collected by EA as well as by other entities/sources that are not under EA's direct control (collectively called "non-EA Data"). All non-EA data reported herein are displayed in the form in which they were received from their source entity, and EA assumes no liability for its accuracy.

This report was prepared in accordance with applicable federal, state, and local laws and regulations, including the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated 1978, New Mexico Hazardous Waste Management Regulations, Resource Conservation and Recovery Act, and regulatory correspondence between the New Mexico Environment Department Hazardous Waste Bureau and the U.S. Air Force, dated March 25 and May 20, 2016. The work presented in this report was conducted in accordance with Kirtland AFB's Hazardous Waste Treatment Facility Operating Permit Number NM9570024423 and the Class V Underground Injection Well Discharge Permit Number 1839, both issued by the New Mexico Environment Department.

Monitoring of groundwater and drinking water and operation of the groundwater treatment system were conducted from January 1 through March 31, 2021.

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	microgram(s) per liter
%	percent
AFB	Air Force Base
BFF	Bulk Fuels Facility
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CFR	Code of Federal Regulations
DL	detection limit
DoD	Department of Defense
DOE	Department of Energy
DP	Discharge Permit
EDB	1,2-dibromoethane (ethylene dibromide)
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
GAC	granular activated carbon
GCMP	Golf Course main pond
gpm	gallon(s) per minute
GWM	groundwater monitoring
GWTS	groundwater treatment system
IDW	investigation-derived waste
IMOA	Interim Measure Operational Area
ISB	In Situ Biodegradation
LNAPL	light non-aqueous phase liquid
LOD	limit of detection
LOQ	limit of quantitation
MCL	maximum contaminant level
mg/L	milligram(s) per liter
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
No.	Number
O&M	operation and maintenance
Permit	Hazardous Waste Treatment Facility Operating Permit No. NM9570024423
psi	pound(s) per square inch

Q1	first quarter of the year, January 1 through March 31
Q2	second quarter of the year, April 1 through June 30
Q4	fourth quarter of the year, October 1 through December 31
QAPjP	Quality Assurance Project Plan
QSM	Quality Systems Manual
RCRA	Resource Conservation and Recovery Act
REI	reference elevation interval
SE	Southeast
Sundance	Sundance Consulting, Inc.
SWMU	Solid Waste Management Unit
USGS	U.S. Geological Survey
VA	Veterans Affairs
VOC	volatile organic compound
WQCC	Water Quality Control Commission

EXECUTIVE SUMMARY

The investigation and interim measure of the Kirtland Air Force Base (AFB) Bulk Fuels Facility release (Solid Waste Management Units ST-106/SS-111) are being implemented pursuant to the Resource Conservation and Recovery Act (RCRA) corrective action provisions in Part 6 of Kirtland AFB's Hazardous Waste Treatment Facility Operating Permit Number (No.) NM9570024423 [RCRA Permit]) (New Mexico Environment Department [NMED], 2010). This Periodic Monitoring Report was prepared in accordance with Parts 6.2.4.1 and 6.2.4.4 of the RCRA Permit, Class V Underground Injection Well Discharge Permit No. 1839 (NMED, 2017b), and NMED General Reporting Guidelines (NMED, 2020b). This report summarizes the activities performed for the first quarter (Q1) of 2021, from January 1 through March 31. These activities include quarterly groundwater monitoring, monthly drinking water supply well sampling, and evaluation of the dissolved-phase 1,2-dibromoethane (ethylene dibromide [EDB]) groundwater pump and treat interim measure.

In Q1 2021, 68 groundwater monitoring wells were sampled. Consistent with previous quarters, the highest EDB and benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations were detected on Kirtland AFB in samples from wells located in the source area. Within the source area plume south of Ridgecrest Drive Southeast, the footprints of the EDB and BTEX plumes have remained stable over time. The plume boundaries are well defined in three dimensions based on samples collected from monitoring wells screened at varying depths across the network.

Sentinel wells are located between the contaminated groundwater and nearby productions wells owned and operated by Kirtland AFB, the Albuquerque Bernalillo County Water Utility Authority, and Raymond G. Murphy Veterans Affairs (VA) Medical Center. These wells serve as an early warning system to assess potential contaminant migration toward production wells and were sampled during Q1 2021. Neither EDB nor BTEX was detected in samples collected from the sentinel wells. Additionally, three Kirtland AFB drinking water supply wells (KAFB-003, KAFB-015, and KAFB-016) and the VA drinking water supply well (ST106-VA-2) were sampled monthly during Q1 2021 with the following exceptions: (1) KAFB-015 was not sampled in January or March 2021 as it was down for maintenance, and (2) ST106-VA-2 was not sampled in February 2021 as the access agreement between Kirtland AFB and the VA Medical Center was in the process of being renewed. Neither EDB nor BTEX was detected in the samples collected from these wells.

Depths to groundwater were gauged in 166 groundwater monitoring wells during Q1 2021. Groundwater elevations ranged from 4872.65 to 4877.59 feet (ft) above mean sea level. Light non-aqueous phase liquid (LNAPL) was detected and measured in four of these wells. The location and thickness of LNAPL was consistent with that measured during previous monitoring events. LNAPL was detected on Kirtland AFB within the source area plume in wells KAFB-106059, KAFB-106076, KAFB-106150-484, and KAFB-106154-484, ranging in thickness from 0.01 ft in KAFB-106059 and KAFB-106076 to 0.33 ft in KAFB-106150-484. The extent of LNAPL was delineated in Q1 2021 as confirmed by 16 wells whose screens were not submerged (i.e., screens intersected the water table) and did not contain LNAPL.

As part of the groundwater treatment interim measure, groundwater pumped from four extraction wells located within the dissolved-phase EDB plume was treated at the groundwater treatment system (GWTS) located on Kirtland AFB. GWTS influent during Q1 2021 had concentrations of EDB below the U.S. Environmental Protection Agency Maximum Contaminant Level of 0.05 micrograms per liter, and BTEX was not detected. The influent was filtered through two treatment trains containing granular activated carbon that removed EDB to levels below detection in the GWTS effluent.

The GWTS ran for 93.3 percent of the time, treated 55,603,200 gallons of groundwater, and removed an estimated 1.03 grams of EDB. Once the groundwater was treated at the GWTS, it was then pumped to the lined main pond at the Kirtland AFB Tijeras Arroyo Golf Course (15,340,800 gallons) and/or gravity-fed into injection wells KAFB-7 (35,450,100 gallons) and KAFB-106IN2 (4,812,300 gallons). To facilitate the redevelopment of injection well KAFB-106IN2, the GWTS was intermittently shut down between January 29 and February 26, 2021.

1. INTRODUCTION

The investigation and interim measure of the Kirtland Air Force Base (AFB) Bulk Fuels Facility (BFF) release (Solid Waste Management Units [SWMUs] ST-106/SS-111) are being implemented pursuant to the Resource Conservation and Recovery Act (RCRA) corrective action provisions in Part 6 of Kirtland AFB's Hazardous Waste Treatment Facility Operating Permit Number (No.) NM9570024423 [Permit]) (New Mexico Environment Department [NMED], 2010). This Periodic Monitoring Report was prepared in accordance with Parts 6.2.4.1, Quarterly Reporting, and 6.2.4.4, Periodic Monitoring Reports, of the RCRA Permit and presents data gathered during first quarter (Q1) 2021 operations. The reporting schedule is provided in the Work Plan for BFF Expansion of the Dissolved-Phase Plume Groundwater Treatment System (GWTS) Design (Kirtland AFB, 2017a). Regulatory correspondence is provided in Appendix A-1, and responses to regulatory comments are provided in Appendix A-2. A crosswalk table between the RCRA Permit reporting requirements and this Periodic Monitoring Report is provided as Appendix A-3.

The BFF site is located within the northwestern portion of Kirtland AFB, on the southern end of the City of Albuquerque, as shown on the site location map (Figure 1-1). The Phase I RCRA Facility Investigation (Kirtland AFB, 2018a) provides a detailed description and history of the BFF. Ongoing groundwater monitoring (GWM) and the groundwater interim measure are discussed in this report.

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2. REGULATORY CRITERIA

The investigation and interim measure of the Kirtland AFB BFF release are being implemented pursuant to the corrective action provisions in Kirtland AFB's RCRA Permit (NMED, 2010). This permit is enforced by NMED's Hazardous Waste Bureau, which is authorized to administer the RCRA Permit by the U.S. Environmental Protection Agency (EPA). The site-specific investigation and interim measure are conducted in accordance with the approved documents presented in Section 3. Relevant regulatory correspondence for Q1 2021 is provided in Appendix A-1.

2.1 Regulatory Standards and Project Screening Levels

The following regulatory standards and project screening levels are applied to assess the data collected during GWM and the interim measure being conducted at SWMUs ST-106/SS-111:

- For samples collected from GWM wells and samples collected for inorganic compound analysis from drinking water supply wells, concentrations are compared to the project screening levels, which are the cleanup levels for contaminants in groundwater as provided in Part 6.2.3.1 of the RCRA Permit (NMED, 2010):
  - The project screening levels are the lowest of the:
    - New Mexico Water Quality Control Commission (WQCC) standard for Groundwater of 10,000 milligrams per liter [mg/L]) Total Dissolved Solids Concentration or Less (New Mexico Administrative Code [NMAC], Title 20, Chapter 6, Part 2, Section 3103 (20.6.2.3103 NMAC); for metals, the New Mexico WQCC standard applies to dissolved metals and total mercury
    - The most up-to-date EPA primary drinking water regulations (40 Code of Federal Regulations [CFR] Part 141, 1975) and secondary drinking water regulations (40 CFR Part 143, 1979) adopted by EPA under the Safe Drinking Water Act (42 U.S. Code §300f et seq., 1974)
  - If no federal maximum contaminant level (MCL) or New Mexico WQCC standard exists for an analyte, the project screening level used is the EPA Residential Tap Water Regional Screening Level (EPA, 2020)
- For samples collected monthly from drinking water supply wells for organic compound analysis, concentrations are compared to the primary and secondary drinking water regulations noted above.

2.2 Regulatory Correspondence and Permit Requirements

Relevant regulatory correspondence for Q1 2021 is provided in Appendix A-1, and a response to regulatory comments is provided in Appendix A-2 in accordance with NMED requirements in the letters dated July 11, 2020, (NOTE: The letter was received on July 11, 2020, but was inadvertently labeled as July 11, 2019) (NMED, 2020a) (Appendix A-1) and September 2, 2020 (NMED, 2020b) (Appendix A-1). A crosswalk table between the RCRA Permit reporting requirements and this Periodic Monitoring Report is provided as Appendix A-3.

Operation of the GWTS and performance monitoring are subject to the terms of Class V Underground Injection Well DP No. 1839 (NMED, 2017b) for injecting treated groundwater to KAFB-7 and KAFB-106IN2. Kirtland AFB is also permitted to discharge to Tijeras Arroyo under National Pollutant Discharge Elimination System Permit NM0031216 (EPA, 2019). This discharge point will only be used in emergency situations (i.e., in the event that the GCMP, KAFB-7, and KAFB-106IN2 are all inoperable) and was not used in Q1 2021.

2.3 Analytical Reporting Limits

To satisfy Department of Defense (DoD) contractual project requirements, groundwater sample analysis was performed in accordance with DoD Quality Systems Manual (QSM) Version 5.3 (DoD and Department of Energy [DOE], 2019) per contract requirements and as applicable to the analytical method. DoD QSM is applicable to EPA SW-846 methodologies being performed on project samples. Drinking water analyses being performed under this contract are in accordance with the RCRA permit and project work plans. DoD QSM reporting limit requirements include: (1) detection limit (DL), (2) limit of detection (LOD), and (3) limit of quantitation (LOQ). The DoD reporting limits are commonly associated with the EPA method detection limit, reporting detection limit, and practical quantitation limit. Discussion regarding DoD reporting limits is provided in Appendix D – Data Quality Evaluation Report. Per DoD QSM reporting requirements, sample results below the LOQ and above the DL are reported with a "J" qualifier, signifying estimated data; however, the "J" qualifier may be used for analytical results above LOQ that are estimated for other reasons. Non-detect sample results are reported with a "U" qualifier at the LOD.

3. SCOPE OF ACTIVITIES

The following activities were performed during Q1 2021:

- Groundwater sampling
- Water level and light non-aqueous phase liquid (LNAPL) gauging
- Drinking water supply well sampling
- GWTS operation and maintenance (O&M)
- Chemical analysis of samples collected
- Investigation-derived waste (IDW) management, disposal, and reporting

The Q1 2021 monitoring program was performed as follows:

- GWM was performed in accordance with the following work plans:
  - Work Plan for BFF Expansion of the Dissolved-Phase Plume GWTS Design Revision 2 (Kirtland AFB, 2017a), approved with conditions by NMED in the letter dated May 31, 2017 (NMED, 2017a)
  - Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling Revision 1 (Kirtland AFB, 2017b), approved with conditions by NMED in the letter dated February 23, 2018 (NMED, 2018a)
  - Work Plan for Data Gap Monitoring Well Installation (Kirtland AFB, 2017c), approved with conditions by NMED in the letter dated February 28, 2018 (NMED, 2018b)
- Drinking water supply well sampling was performed in accordance with the Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling Revision 1 (Kirtland AFB, 2017b), approved with conditions by NMED in the letter dated February 23, 2018 (NMED, 2018a)
- GWTS operations, sampling, and the discharge of treated effluent were performed in accordance with the following:
  - O&M Plan, GWTS (Kirtland AFB, 2016a), which was approved with modifications by NMED in the letter dated December 12, 2016 (NMED, 2016), and revisions to the O&M Plan, which address the expanded GWTS (Kirtland AFB, 2017d, 2018b)
  - Discharge Permit (DP)-1839, issued by NMED in April 2017 (NMED, 2017b)
  - EPA National Pollutant Discharge Elimination System Permit No. NM0031216, issued in September 2019 (EPA, 2019)

Field methods are provided in Appendix B-1, and a list of former well identifications for cross-reference with historical documentation is provided in Appendix B-2. A consolidated GWM Work Plan (Kirtland AFB, 2021a) and an updated O&M plan (Kirtland AFB, 2021b) were submitted to NMED in Q1 2021 and will be implemented following approval by NMED.

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4. MONITORING RESULTS

The following sections describe results of samples collected from GWM wells and drinking water supply wells during Q1 2021. Vadose zone monitoring (i.e., soil vapor monitoring) is not a part of Q1 activities.

4.1 Groundwater Monitoring

As of Q1 2021, the BFF GWM well network was comprised of 172 GWM wells (Figure 4-1a, and Tables 4-1 and 4-2), including 166 wells that are sampled on a quarterly or semiannual basis, five wells that are gauged but not sampled (KAFB-106148-484, KAFB-106150-484, KAFB-106154-484, KAFB-106155-484, and KAFB-106156-484), and one well that is gauged and will be sampled once the water level rises within the screened interval to allow for low-flow sampling (KAFB-106211).

In Q1 2021, 166 wells were gauged and 68 wells were sampled to comply with the applicable technical requirements in Part 6.5 of the RCRA Permit (NMED, 2010). Figure 4-1b depicts the well network sampled during Q1 2021. Work was performed following the field methods specified in Appendix B-1.

Appendices pertinent to GWM are listed below:

- Appendix C:
  - C-1 Daily Quality Control Reports – Groundwater Sampling
  - C-2 Groundwater and LNAPL Measurements
  - C-3 Groundwater Purge Logs and Sample Collection Logs
  - C-4 Groundwater Sample Chain-of-Custody Forms
  - C-5 U.S. Geological Survey (USGS) Sentinel Well Data
  - C-6 Descriptions from Previous Reports
- Appendix D:
  - D-1 Groundwater Analytical Data
  - D-2 Data Quality Evaluation Report – Groundwater Samples
  - D-3 Data Packages – Groundwater Samples
  - D-4 EPA Data Verification and Validation Figures

Prior to the fourth quarter (Q4) of 2018, GWM wells were assigned designations based either on their location relative to the groundwater gradient and their spatial relationship to the dissolved-phase 1,2-dibromoethane (ethylene dibromide [EDB]) plume or simply on their location (i.e., source area). In response to the changing regional groundwater gradient, GWM wells and their associated groundwater data are currently described based on one of the three reference elevation intervals (REIs) for the BFF site: 4857, 4838, and 4814. REIs are feet above mean sea level elevations that divide the GWM network into data sets comprised of wells that are screened across their respective elevations, allowing for a vertical evaluation of groundwater parameters and contaminant concentrations. A detailed explanation of how the REIs are defined is provided in Appendix C-6. In addition, this appendix includes discussion on field parameters in reference to passive sampling, passive sampling data evaluation, regional groundwater gradient, and former well designation and associated sampling regimes. The former well designations and the current sampling regime by quarter are provided in Table 4-1.

In this report, results of samples collected from GWM wells are discussed based on their location (north or south) in relation to Ridgecrest Drive Southeast (SE). The Source Area Plume is located south of

Ridgecrest Drive SE. The Interim Measure Operational Area (IMOA) for groundwater is located north of Ridgecrest Drive SE (Figure 4-1a).

GWM activities included gauging the depths to groundwater and measuring LNAPL thickness (Table 4-2, Figures 4-2 and 4-3); field parameters were measured in groundwater from wells sampled using low-flow techniques (Appendix C-3). Field parameter measurements are not performed on groundwater samples collected using passive sampling methodology, as discussed in more detail in Appendix C-6. Groundwater samples were submitted for laboratory analysis, and results are discussed in Section 4.1.5.

4.1.1 New Groundwater Monitoring Activities

Six GWM wells were installed between November 2020 and March 2021 in accordance with the Work Plan for Data Gap Monitoring Well Installation KAFB-106248 to KAFB-106252 (Kirtland AFB, 2019). These monitoring wells were completed as nested wells that included one water table well and one well screened in the vadose zone to account for expected water table rise. The nomenclature for these wells follows the convention used for previous nested GWM wells installed at SWMUs ST-106/SS-111 including the prefix KAFB, the borehole identification, and a three-digit suffix identifying the depth in feet below ground surface to the top of the screen in each well. In Q1 2021, the status of these six GWM wells was as follows:

- Monitoring well KAFB-106S10-443, installed in Q4 2020, was sampled for the first time in Q1 2021. The analytical results are presented in Section 4.1.5. The status of the quarterly baseline sampling for this well is summarized in Table 4-3.

- Four GWM wells, KAFB-106249-450, KAFB-106250-413, KAFB-106251-409, and KAFB-106252-425, were installed in Q1 2021 and sampled for the first time between February 23 and March 23, 2021. The results will be provided in the second quarter (Q2) of the 2021 Periodic Monitoring Report.

- KAFB-106248-444 was completed in March 2021 and will begin baseline sampling in Q2 2021.

4.1.2 Groundwater and Light Non-Aqueous Phase Liquid Gauging

Depth to water and thickness of LNAPL in the GWM wells were gauged using five oil-water interface probes, each dedicated to groups of wells with similar historical analytical results. Measurement differences from a control probe were calculated in accordance with the methods described in Appendix B-1, and subsequent data corrections are presented in Appendix C-2, Table C-2-2.

Gauging was performed in 166 GWM wells in Q1 2021 (Table 4-2). Gauging deviations, including wells not gauged, are discussed in Section 4.1.2.2. Measurement instrument calibration is provided in Table C-2-1. Gauging monitoring results are presented in Section 4.1.2.1.

The interface probes were checked for proper operation, and the cables were checked for integrity prior to each use; the equipment was decontaminated after gauging each well. If LNAPL was detected using the interface probe, a plastic bailer was used to confirm the presence and thickness of the LNAPL. Additionally, during low-flow sampling using Bennett pumps, every well was checked for the presence of LNAPL prior to setting the pump. Depths to LNAPL, if applicable, and groundwater were recorded in the field on electronic well gauging forms (Appendix C-2, Table C-2-3). LNAPL was not detected in wells sampled in Q1 2021.

4.1.2.1 Groundwater Gauging Results

In Q1 2021, 166 GWM wells were gauged. Of these, 80 wells were in REI 4857, eight wells were in REI 4857/4838, 38 were in REI 4838, and 40 were in REI 4814. Of the 88 GWM wells in REI 4857 and REI 4857/4838, KAFB-106211 was found to be dry, 36 wells had screens that intersected the water table in Q1 2021, and 51 wells had submerged well screens. Screen submergence in these 51 wells ranged from 2.90 to 23.16 ft above the top of the screen in KAFB-106207 and KAFB-106025, respectively.

The potentiometric surface map for REI 4857 was created using 86 of the GWM wells in REI 4857 and REI 4857/4838 (Figure 4-2); KAFB-106211 was excluded as it was dry, and KAFB-106S10-443 was excluded as the measurement was obtained outside of the synoptic gauging event. Horizontal groundwater gradients within REI 4857 are dominated by a radial flow pattern toward depressions in the water table, which are primarily attributable to groundwater extraction wells. The potentiometric surfaces for REI 4838 and REI 4814 are assessed in Q2 and Q4 of each year. In Q2 2021, groundwater elevations ranged from 4872.65 to 4877.59 ft above mean sea level.

LNAPL was present in only four wells (KAFB-106059, KAFB-106076, KAFB-106150-484, and KAFB-106154-484) at thicknesses of 0.01, 0.01, 0.33, and 0.22 ft, respectively; its presence is consistent with previous monitoring events (Table 4-4). Figure 4-3 depicts the wells where LNAPL was detected in Q1 as well as historical LNAPL locations. The extent of LNAPL is confined to the area south of Ridgecrest Drive SE, on Kirtland AFB, and within the footprint of the Source Area Plume. The extent of LNAPL was delineated in Q1 2021 as confirmed by 16 wells whose screens were not submerged (i.e., screens intersected the water table) and did not contain LNAPL (Figure 4-3).

4.1.2.2 Gauging Deviations

Water level measurements were not obtained from three wells during the Q1 2021 synoptic gauging event. Depths to water in wells KAFB-106063 and KAFB-106064 (Figure 4-1a, Figure 4-1b) were not measured due to the presence of dedicated downhole equipment related to the Environmental Security Technology Certification Program pilot test project for EDB In Situ Biodegradation (ISB) (Kirtland AFB, 2016b). Depth to water in new well KAFB-106S10-443 was measured prior to sampling on January 15, 2021; however, it was not included in the synoptic gauging event as it was not yet surveyed, so an accurate groundwater elevation could not be calculated at the time. These three wells will be gauged during the synoptic gauging event beginning in Q2 2021.

4.1.3 Groundwater Sampling

Groundwater samples were collected from 68 wells of the GWM network between January 4 and January 15, 2021 (Table 4-5). Of the 68 wells, 15 were sampled using low-flow pump systems and 53 using passive sampling methods (Table 4-5). Well locations are shown on Figure 4-1b, and sentinel well locations are shown on Figure 4-4; sentinel wells are those located between contaminant plumes and a water supply well. These wells provide early detection if contaminants migrate toward the water supply wells.

The groundwater samples collected from each well were analyzed for the specific analytical suite specified in Tables 4-1 and 4-5. The suite included benzene, toluene, ethylbenzene, and total xylenes (BTEX), EDB, metals, anions, and alkalinity. Field parameters were measured in select wells as per the monitoring regimen. Groundwater samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC located in Lancaster, Pennsylvania, which maintains current DoD Environmental Laboratory Accreditation Program certification. Sampling was conducted in accordance with the applicable technical requirements in Parts 6.5.5 and 6.5.17 of the RCRA Permit (NMED, 2010).

Appendix B-1 describes the field methods used for GWM. The groundwater purge and sampling forms are provided in Appendix C-3, and the chain-of-custody forms are provided in Appendix C-4.

Wells KAFB-106149-484, KAFB-106151-484, KAFB-106152-484, and KAFB-106153-484 were added to the GWM network in Q1 2018 as a stop-gap measure to fill a data gap that was created due to rising groundwater. The data gap was created as screens in GWM wells that were initially installed to capture conditions at the water table became fully submerged as groundwater rose across the site. Wells KAFB-106149-484, KAFB-106151-484, KAFB-106152-484, and KAFB-106153-484 were originally designed and installed for the purpose of vadose zone characterization, with the bottom of the screened interval reaching a depth approximately 5 ft above the water table at the time of installation. As the water table rose, it intersected the screened interval of these wells. In 2018, there was sufficient water column within the wells for groundwater sampling, and they were added to the GWM program until new wells designed for GWM could be installed and developed.

Wells KAFB-106063 and KAFB-106064 were not scheduled for sampling as part of regular GWM activities (Table 4-1) but were sampled for volatile organic compounds (VOCs) as part of the long-term monitoring for the EDB In Situ Biodegradation pilot test. EDB and BTEX results for these wells are presented in this report, and the full suite of VOC results are provided in Appendix D-1. The samples from these two wells were analyzed by ALS Environmental in Houston, Texas.

4.1.3.1 Sampling Deviations

There were no groundwater sampling deviations in Q1 2021.

4.1.4 Data Review and Usability Results

Laboratory deliverables and data quality evaluation reports were prepared and provided in accordance with Parts 6.5.18.2 and 6.5.18.3 of the RCRA Permit (NMED, 2010). Data verification and data validation are sequential steps in a data review process that are performed by the contractor collecting the data (verification) and an independent third-party subcontractor (validation). Data verification was performed on the Q1 data set to ensure method, procedural, and contractual compliance with project-specific requirements in the Quality Assurance Project Plan (QAPjP), Appendix D of the Work Plan for BFF Expansion of the Dissolved-Phase Plume GWTS (Kirtland AFB, 2017a).

Following data verification, the Q1 2021 groundwater analytical data underwent 100 percent (%) EPA Stage 2B data validation by an independent third-party subcontractor, Validata Chemical Services, Inc., Duluth, Georgia. Data validation consists of an analyte- and sample-specific process that extends the evaluation of analytical data beyond the data verification process to determine the quality of a specific data set in accordance with analytical method quality control and DoD QSM requirements as documented in the QAPjP (Kirtland AFB, 2017a). Validation includes review of data quality indicators to assess the precision, accuracy, representativeness, comparability, completeness, and sensitivity of the analytical data set and determine that the data achieve the project data quality objectives. Data qualifiers that may be applied to data during the validation process include “J”, “U”, and “R”. The “J” qualifier signifies an estimated result, the “U” qualifier indicates a non-detect result, and “R” signifies rejected data. Data qualified with “J” and “U” are usable to achieve project objectives; however, “R” qualified sample data do not meet project objectives. None of the Q1 2021 data was “R” qualified. Upon completion of the verification and validation process, the data were assessed to determine if the project data quality objectives were achieved and deemed usable for their intended purpose.

Final validated groundwater analytical data are presented in Appendix D-1. The Data Quality Evaluation Report for groundwater samples collected in Q1 2021 is provided in Appendix D-2, and the EPA Level II laboratory data reports are provided in Appendix D-3. Further details regarding EPA data verification and validation processes are documented in Figures 2 and 4 of the Guidance on Environmental Data Verification and Data Validation (EPA, 2002) provided in Appendix D-4.

Based on the validation, analytical data were qualified "J" and "UJ" for estimated detect and non-detect data, respectively, and "U" signifying non-detect results. The laboratory reported that the LOQs (the equivalent to the EPA practical quantitation limits) exceeded the project screening level for 31 analytical results. These exceedances were due to sample dilution performed during analyses because of elevated concentrations for target analytes (Appendix D-1). The laboratory may also perform screening of samples prior to analysis so they are able to achieve DoD QSM contractual analytical requirements; the screening would indicate when dilution is necessary, so the instruments perform within the calibration standards. Qualified data are still deemed usable to achieve project objectives based on validation guidance. Details regarding data validation and data qualifiers are included in Appendix D-2. Data from GWM monitoring in Q1 2021 were found to be usable to achieve the project data quality objectives as qualified based on validation.

Subsequent to performing data validation, the validation data qualifiers were uploaded to the EQuIS® project database. The groundwater data presented and discussed in this report are final validated data and determined through validation to have achieved project data quality objectives and is thus usable for the purpose it was collected. Final validated data will be uploaded to the U.S. Air Force data repository through the Environmental Resources Program Information Management System. EPA Level IV data packages will be maintained by Kirtland AFB and made available to NMED upon request in accordance with Part 6.5.18.2 of the RCRA Permit (NMED, 2010).

4.1.5 Groundwater Chemical Analytical Data Results

During Q1 2021, 68 GWM wells were sampled for the suite of analytes specified for the Q1 regimen (Table 4-5); of those wells, KAFB-106063 and KAFB-106064 were not scheduled for regular Q1 GWM sampling but were sampled for VOCs as part of the EDB ISB pilot test, and KAFB-106S10-443 was analyzed for baseline sampling requirements (Section 4.1.1). Analytical results for well KAFB-106S10-443 are provided in Table 4-6. Analytical results for samples from all other wells are presented in Table 4-7 for BTEX and EDB and Table 4-8 for inorganic compounds.

Contaminant concentrations are discussed in the following sections. The analytical results for field duplicate samples are presented in the tables and were used to assess field and laboratory analytical precision; however, they are not discussed in this text unless otherwise noted and are not provided on figures. Analytical results and screening levels are provided in a sortable, searchable format in Appendix D-1. A discussion of the results for the duplicate sample analytical results is included in the Data Quality Evaluation Report (Appendix D-2).

In this report, sample results from GWM wells are discussed based on their location relative to the IMOA, the southern border of which is defined by Ridgecrest Drive SE (Figure 4-1b); as a consequence, they will be described as north or south of Ridgecrest Drive SE. The Source Area Plume is located south of Ridgecrest Drive SE. The IMOA for the groundwater interim measure is located north of Ridgecrest Drive SE.

Historical analytical results for the previous three sampling events for the wells within the GWM network are provided in Tables 4-9 and 4-10 for EDB and BTEX, respectively. Q1 2021 concentrations are depicted for EDB on Figure 4-5 and for BTEX on Figure 4-6.

The following analytical methods were used for sample analysis:

- EDB by EPA Method SW8011
- BTEX and VOCs by EPA Method SW8260C
- Total petroleum hydrocarbons by EPA Method SW8015D (KAFB-106S10-443 only)
- Metals by EPA Methods SW6010C and SW6020A
- Anions by EPA Methods E300.0 and E353.2
- Alkalinity by Standard Method 2320B

4.1.5.1 Organic Compounds Analytical Results

The following subsections discuss EDB and BTEX analytical results for the current quarter.

4.1.5.1.1 EDB Analytical Results

Groundwater samples from 68 wells were analyzed for EDB in Q1 2021. Results for EDB for the new monitoring well KAFB-106S10-443 are presented in Table 4-6, while analytical results of EDB for the other 67 wells are presented in Table 4-7. There were no detections of EDB in sentinel GWM wells in Q1 2021; sentinel well locations are shown on Figure 4-4. EDB concentrations are depicted on Figure 4-5.

EDB Analytical Results North of Ridgecrest Drive SE

Of the 68 wells analyzed for EDB in Q1 2021, 37 were located in the IMOA north of Ridgecrest Drive SE:

- Concentrations of EDB exceeded the project screening level of 0.05 micrograms per liter (µg/L) in the groundwater sample collected from KAFB-106041 at an estimated concentration of 0.098 µg/L. Well KAFB-106041 is located in REI 4857 south-southwest of extraction well KAFB-106234.

- EDB was also detected but below the project screening level in the samples collected from monitoring wells KAFB-106205, KAFB-106241-428, and KAFB-106243-425.

EDB Analytical Results South of Ridgecrest Drive SE

Of the 68 wells sampled for EDB analysis in Q1 2021, 31 were located south of Ridgecrest Drive SE. Concentrations of EDB exceeded the project screening level of 0.05 µg/L in 13 of these wells:

- Eleven EDB exceedances were observed in samples collected from monitoring wells located on Kirtland AFB.

- The highest EDB concentration was detected in the groundwater sample collected from well KAFB-106S8-451 at 350 µg/L, which is located on Kirtland AFB in REI 4857 in the eastern portion of the source area.

- EDB was detected in two wells located north of Kirtland AFB in samples from monitoring wells KAFB-106S5-446 and KAFB-106S7-451. Both of these detections exceeded the project screening level; the highest concentration was estimated at 11 µg/L in well KAFB-106S5-446 in REI 4857.

4.1.5.1.2 BTEX Analytical Results

Groundwater samples from 27 wells were analyzed for BTEX in Q1 2021; the results for BTEX for the new monitoring well KAFB-106S10-443 are presented in Table 4-6, while analytical results of BTEX for the other 67 wells are presented in Table 4-7. There were no detections of BTEX in sentinel GWM wells in Q1 2021; sentinel well locations are shown on Figure 4-4. BTEX concentrations are depicted on Figure 4-6.

BTEX Analytical Results North of Ridgecrest Drive SE

No wells in the IMOA are part of the sampling regimen for BTEX in Q1.

BTEX Analytical Results South of Ridgecrest Drive SE

The 27 wells sampled for BTEX in Q1 2021 were located south of Ridgecrest Drive SE in the Source Area. Of these:

- Benzene exceeded the project screening level of 5.0 µg/L in 11 wells. Ten of these wells were located in REI 4857, and one was located in REI 4858 (KAFB-106063). The highest benzene concentration was detected in the new well KAFB-106S10-443 at 11,000 µg/L.

- Toluene exceeded the 1,000 µg/L project screening level in three wells; these exceedances were located in REI 4857. The highest toluene concentration was detected in the new well (KAFB-106S10-443) at 17,000 µg/L.

- Ethylbenzene exceeded the 700 µg/L project screening level in two wells, KAFB-106S5-446 at 1,700 µg/L and KAFB-106064 at 4,600 µg/L. These wells are located in REI 4857.

- Total xylenes exceeded the 620 µg/L project screening level in 11 wells. Ten of these exceedances were located in REI 4857, and one was located in REI 4858 (KAFB-106063). The highest total xylenes concentration was detected in KAFB-106064 at 4,600 µg/L, located in REI 4857 in the EDB ISB pilot test area.

4.1.5.2 Inorganic Compound Analytical Results

Inorganic compounds include total metals (arsenic, lead, calcium, magnesium, potassium, and sodium), dissolved metals (iron and manganese), and anions (bromide, chloride, sulfate, and nitrate/nitrite nitrogen). A total of 25 wells were sampled for inorganic compounds in Q1 2021. Inorganic analytical results are presented in Tables 4-6 and 4-8. Total metals and anions are not site contaminants but are analyzed to evaluate the geochemical conditions of the aquifer, including bioremediation indicators, in Q2 and Q4 of each year.

4.1.5.3 Sampling Results for U.S. Geological Survey Sentinel Wells

USGS monitors 14 sentinel wells located in four well nests (USGS VA well nest, USGS Trumbull well nest, USGS Southern well nest, and USGS Caesar Chavez well nest) between the Kirtland AFB BFF EDB plume and water supply wells which are owned and operated by the Albuquerque Bernalillo County Water Utility Authority and Raymond G. Murphy VA Medical Center (Figure 4-4). This monitoring is conducted as a means of providing independent observation of water quality in the vicinity of these water

supply wells. Samples are collected from these sentinel wells quarterly. For Q1 2021, these samples were collected using dual membrane samplers from February 1 to February 5, 2021. The samples were analyzed for VOCs and EDB by the USGS National Water Quality Laboratory using Method O-4127-96 (Connor et al., 1998). No detections were found in the Q1 2021 samples. The USGS transmittal letter, including the Q1 2021 data results, is provided in Appendix C-5.

4.1.5.4 Field Parameter Monitoring Results

Field parameters were collected from 14 wells that were sampled using the low-flow sampling method; these wells are located in the Source Area Plume. Field parameter data for Q1 2021 and historical field parameter data from the three previous quarters are presented in Appendix C-3, Table C-3-1.

4.1.6 Groundwater Monitoring Well Network Maintenance

The GWM well network was inspected to ensure that the condition of all protective covers and wellheads met the intended performance and security requirements. During the inspection period, cleaning and maintenance were performed, and all GWM wells were determined to be fully serviceable. No dedicated Bennett pumps were removed during Q1 2021. As of the end of Q1 2021, 95 dedicated Bennett pumps have been removed from the GWM well network. Of these, 77 were removed in Q2 2017 as part of a transition to passive sampling for the monitoring program (NMED, 2017a). Of those, 18 dedicated Bennett pumps were removed due to failure and will continue to be sampled using a portable Bennett pump until official written approval is obtained to convert to passive sampling.

4.2 Drinking Water Supply Well Monitoring

Four drinking water supply wells are sampled monthly as part of the monitoring program associated with the BFF site. Wells KAFB-003, KAFB-015, and KAFB-016 provide drinking water to Kirtland AFB employees on base and tenants of Maxwell Housing, which is located outside of Kirtland AFB. Drinking water supply well ST106-VA-2 provides drinking water to VA Medical Center patients, employees, and visitors. These drinking water wells belong to community water systems that are regulated by the NMED Drinking Water Bureau in accordance with the Safe Drinking Water Act that require that samples be analyzed for EDB and BTEX to document that they have not been impacted by the contaminant plume.

4.2.1 Drinking Water Supply Well Sampling

Drinking water supply wells KAFB-003, KAFB-015, KAFB-016, and ST106-VA-2 were sampled monthly during this quarter, with deviations noted in Section 4.2.1.1.

Daily quality control reports are provided in Appendix E-1, and the completed sample collection logs and chain-of-custody forms are provided in Appendix E-2. Drinking water supply samples were submitted for the following analyses to Eurofins TestAmerica Laboratories in Savannah, Georgia, for the following analyses:

- EDB using EPA Method 504.1
- BTEX using EPA Method 524.2

Analytical results were validated by Environmental Data Services, Inc. The Data Quality Evaluation Reports are provided in Appendix F-1. The Eurofins TestAmerica Laboratories Analytical Reports for January, February, and March 2021, are provided in Appendix F-2.

4.2.1.1 Sampling Deviations

Drinking water well KAFB-015 was not sampled in January or March 2021 as it was down for maintenance and drinking water well ST106-VA-2 was not sampled in February 2021 as the access agreement between Kirtland AFB and the VA Medical Center was in the process of being renewed.

4.2.2 Data Review and Usability Results

Following data verification, the Q1 2021 drinking water analytical data underwent a 100% Stage 3 data validation performed by Environmental Data Services, Inc., Palm Gardens, Florida. The data verification and validation steps are discussed in detail in Section 4.1.4.

All data were valid based on the evaluation criteria, and the data completeness was 100%. The data met data quality objectives and were appropriate for use in project decision-making. Upon completion of the verification and validation process, the data were assessed to determine if the project data quality objectives were achieved and deemed usable for their intended purpose. The quality control parameter and data quality evaluation results are provided in the Data Quality Evaluation Report and Data Validation Report provided in Appendix F-1. Final validated data are provided in Table 4-11.

4.2.3 Drinking Water Supply Well Analytical Results for Q1 2021

Appendix F-3 includes analytical data from Q1 2021 and the three previous quarters. EDB and BTEX monthly results for Q1 2021 are presented in Table 4-11 and Figure 4-7. No detectable concentrations of EDB or BTEX were observed in the drinking water supply wells samples, consistent with historical results.

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5. INTERIM MEASURE OPERATION AND MONITORING

This section presents the Q1 2021 GWTS operation, performance monitoring and EDB removal, system maintenance and expansion, and analysis of the lines of evidence for the system. Appendices pertinent to GWTS operation and performance are:

- Appendix G-1 GWTS Plant O&M Documentation
- Appendix G-2 New Mexico 811 Line Locate Tickets
- Appendix G-3 GWTS Performance Sample Collection Logs
- Appendix G-4 Data Quality Evaluation Report – GWTS Samples
- Appendix G-5 Data Packages – GWTS Samples
- Appendix G-6 GWTS Performance Analytical Data

5.1 Groundwater Treatment System Operation

The GWTS is part of the interim measure implemented pursuant to the corrective action provisions in Kirtland AFB's RCRA Permit (NMED, 2010). The purpose of the interim measure is to collapse and treat the dissolved-phase EDB plume within the IMOA, which is located north of Ridgecrest Drive SE. The GWTS includes:

- Four extraction wells: KAFB-106228, KAFB-106233, KAFB-106234, and KAFB-106239
- Influent conveyance piping
- Two carbon treatment trains (designed for but not currently operating at 800-gallon per minute [gpm] maximum capacity) located within the GWTS building
- Effluent conveyance lines

Treated effluent is discharged to either the Tijeras Arroyo Golf Course main pond (GCMP) or is gravity-fed into one of the injection wells, KAFB-7 or KAFB-106IN2 (Figure 5-1). Kirtland AFB is also permitted to discharge to Tijeras Arroyo under the National Pollutant Discharge Elimination System Permit NM0031216 (EPA, 2019). This discharge point will only be used in emergency situations (i.e., in the event that the GCMP, KAFB-7, or KAFB-106IN2 are all inoperable).

The operation of the GWTS is subject to the terms of DP-1839, as discussed in Section 2. The requirements associated with the conditions of DP-1839 and the location of reporting requirements in this report are summarized in Table 5-1.

5.1.1 Groundwater Treatment System Treatment Volumes and Percentage Run Time

For the purpose of run time evaluation, GWTS operation is defined as the time during which groundwater is being pumped from at least one extraction well and subsequently treated and discharged. Table 5-2 provides a monthly and quarterly summary of the extraction well performance during Q1 2021, including individual extraction well run times.

Table 5-3 provides a cumulative summary of groundwater quantities extracted, treated, and discharged. During Q1 2021, the GWTS treated 55,603,200 gallons of groundwater, of which 37,339,900 gallons were treated in Train 1 and 18,263,300 gallons in Train 2. GCMP received 15,340,800 gallons of the

treated effluent, while 35,450,100 gallons were discharged to injection well KAFB-7 and 4,812,300 gallons were discharged to injection well KAFB-106IN2.

During this quarter, the GWTS was operational 93.3% of the time (Table 5-2), with planned and unplanned system shutdowns, including shutdowns during redevelopment of KAFB-106IN2, affecting the overall run time as described in Sections 5.3.1 and 5.3.3.

5.1.2 Extraction Well Performance Metrics

Quarterly extraction well performance data required for DP-1839 reporting compliance are provided in Table 5-2. Average operational extraction flow rates do not include flow rates during downtime. Well performance graphs are provided in Appendix G-1.

Extraction wells are prioritized for pumping based on their impact on the EDB plume in the IMOA and protection of the municipal water supply wells. Based on GWTS performance monitoring and wellhead sampling results, extraction wells KAFB-106228 and KAFB-106239 are the highest priority as they currently have the greatest impact on the reduction of the EDB plume in the IMOA. Well KAFB-106234 is the next highest priority as it serves to capture the distal plume and acts as a hydrologic barrier between the EDB plume in the IMOA and the municipal water supply wells to the northeast. Well KAFB-106233 has minimal impact on EDB plume reduction and is, therefore, the most likely to be deprioritized. The following is a summary of average operational flows and run times in Q1 2021 (Table 5-2):

- Water was extracted from KAFB-106228 at an average operational flow rate of 137.1 gpm with a run time of 93.3%.
- Water was extracted from KAFB-106234 at an average operational flow rate of 173.1 gpm with a run time of 93.0%.
- Water was extracted from KAFB-106239 at an average operational flow rate of 74.1 gpm with a run time of 89.9%.
- Water was extracted from KAFB-106233 at an average operational flow rate of 160.0 gpm with a run time of 67.3%.

5.1.3 Injection Well Performance Metrics

Quarterly injection well performance data required for DP-1839 reporting compliance are provided in Table 5-4. Injection well performance figures are provided in Appendix G-1. The following performance data apply to effluent injection in Q1 2021:

- Groundwater was injected into KAFB-7 at an average operational flow rate of 561.4 gpm with a run time of 60.8%.
- Groundwater was injected into KAFB-106IN2 at an average operational flow rate of 537.3 gpm with a run time of 9.8%. Installation of this well was completed in December 2020, and the well is currently operational.

5.2 Groundwater Treatment System Performance Monitoring and 1,2-Dibromoethane Removal

GWTS performance monitoring is performed in conformance with the most recently approved Work Plan (Kirtland AFB, 2017a) as well as the O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017d, 2018b). DP-1839 provides additional sampling criteria. Table 2 of DP-1839 provides a list of the compounds that are most frequently monitored at the GWTS (NMED, 2017b). Q1 2021 GWTS analytical performance metrics and EDB mass removal are discussed in the following sections.

5.2.1 Sampling and Analytical Results

In Q1 2021, water samples from Train 1 (connected to KAFB-106233 and KAFB-106234) and Train 2 (connected to KAFB-106228 and KAFB-106239) were collected monthly from:

1. The untreated influent sample identifications GWTS-BFF-INF1 and GWTS-BFF-INF2 for Train 1 and 2, respectively).

2. A port located in-between the initial and final granular activated carbon (GAC) vessels (sample identifications GWTS-BFF-GAC1 and GWTS-BFF-GAC2 for Train 1 and 2, respectively).

3. The treated effluent (sample identifications GWTS-BFF-EFF1 and GWTS-BFF-EFF2 for Train 1 and 2, respectively).

These samples were analyzed for EDB, BTEX, and dissolved iron and manganese. EDB concentrations and mass removal for Q1 2021 are summarized in Table 5-5. Sample results and effluent discharge limits are provided in Tables 5-6 and 5-7 for Trains 1 and 2, respectively, and are discussed in detail below. GWTS performance sample collection logs are provided in Appendix G-3, and analytical data for this quarter and the previous three quarters are provided in Appendix G-6.

Concentrations of EDB in the influent samples of Train 1 were below the laboratory DL for all samples collected during Q1 2021 (Table 5-6); therefore, no mass of EDB was estimated to be captured and removed in the initial GAC vessel of Train 1.

Concentrations of EDB were detected in the influent samples of Train 2 below the 0.05 µg/L project screening level at estimated concentrations of 0.017 J and 0.014 J µg/L in January and February 2021, respectively. EDB was not detected in the influent sample of Train 2 in March 2021. An estimated 1.03 grams of EDB were captured in the initial GAC vessel and was removed by Train 2. Mass removal is determined by multiplying the monthly influent concentration by the respective total weekly treated volume for the respective treatment train. Quantities of mass removed during Q1 2021 are presented in Table 5-5.

BTEX was not detected in influent samples collected from either train during Q1 2021.

Dissolved manganese was not detected in the influent samples collected from Train 1 and was detected below the project screening level in monthly influent samples collected from Train 2 in Q1 2021. Dissolved iron was not detected in monthly influent samples collected from either train.

Concentrations of EDB, BTEX, dissolved iron, and manganese were non-detect in effluent monthly samples collected from either train during Q1 2021. However, during GAC changeout sampling events,

manganese was detected below the project screening level within Train 2 effluent samples, as discussed in Section 5.3.3 (Table 5-8).

Additional sampling of treated water throughout the vertical profile of Train 2 Tank B GAC vessel was performed in January 2021. EDB was detected in the samples throughout each vertical profile sampling port at concentrations below the 0.05 µg/L MCL (Appendix G-1, Table G-1-5). This additional sampling indicates the possible desorption of EDB from the GAC relating to water abrasion on the media. Note that the possible desorption was observed from the initial GAC vessel and any desorbed EDB was therefore captured by the final GAC vessel. Although the EDB detections were at concentrations well below actionable levels (defined as 90% of the MCL), they prompted a GAC changeout in Train 2 Tank B in order to continue conservative operations of the GWTS (Section 5.3.3). The changeout of the Train 2 GAC Tank B on March 2, 2021, resolved the EDB detection.

5.2.1.1 Sampling Deviations

There were no GWTS sampling deviations in Q1 2021.

5.2.2 Data Review and Usability Results

The GWTS analytical data from Q1 2021 underwent EPA Stage 3 data validation by Validata Chemical Services, Inc., Duluth, Georgia, or Environmental Data Services, Inc., Palm Gardens, Florida, following data verification. The data verification and validation steps are discussed in detail in Section 4.1.4.

Upon completion of the verification and validation process, the data were assessed for accuracy, precision, representativeness, comparability, completeness, and sensitivity to determine if the project data quality objectives were achieved and deemed usable for their intended purpose. The data validation results are included in the Data Quality Evaluation Report provided in Appendix G-4, and the final laboratory data reports are provided in Appendix G-5.

5.3 Groundwater Treatment System Maintenance and Expansion Activities

Q1 2021 maintenance activities at the GWTS were performed in accordance with the O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017d, 2018b) and are discussed in the following sections.

5.3.1 Routine Maintenance Activities

Routine maintenance is any activity described as such in the GWTS O&M Plan. A summary of routine maintenance activities is provided below.

5.3.1.1 Quarterly Routine Maintenance Activities

During Q1 2021, Train 1 effluent bag filters were replaced on February 3, 2021, and Train 2 effluent bag filters were replaced on February 4, 2021. Influent bag filters were not replaced on either train as they did not reach the differential pressure of 4 pounds per square inch (psi) required for replacement by the GWTS O&M Plan. The differential pressure at the initial GAC vessel on Train 1 was 2.9 psi on January 1, 2021, and, on March 31, 2021, the differential pressure was 3.0 psi (Appendix G-1). The differential pressure at the initial GAC vessel on Train 2 was 5.2 psi on January 1 and on March 31, 2021, the differential pressure was 6.0 psi.

In Q1 2021, the influent basket strainers were cleaned 13 times for both trains, and the effluent Wye strainers were cleaned once for both trains. Wye strainers/basket strainers were cleaned to maintain equalization of the influent tanks and prevent cavitation at the influent pump intakes as they accumulate biologic materials coming in with the influent.

The GWTS routine maintenance schedule is provided in Table 5-9, and non-routine maintenance activities that were performed during Q1 2021 are discussed in Section 5.3.3 and in Table 5-10.

5.3.2 Conveyance Line Security and Administrative Controls

Kirtland AFB is registered as a line-owner with New Mexico 811 for the off-Base portion of the conveyance lines. U.S. Air Force permits are required for all on-Base excavation projects, and during the quarter Kirtland AFB responded to 29 off-Base tickets requested through New Mexico 811 (Appendix G-2). There were no conveyance line breaches, and all off-Base conveyance lines remained intact.

5.3.3 Quarterly Non-Routine Maintenance Activities

Non-routine maintenance activities are defined as maintenance items that fall outside the scope of the GWTS O&M Plan but need to be addressed to maintain consistent GWTS operation. A summary of shutdowns associated with non-routine maintenance activities occurring during Q1 2021 is provided on Table 5-9. Major non-routine maintenance performed in Q1 2021 is described in the following paragraphs.

On January 7, 2021, Train 2 was shut down to facilitate the cleaning of the influent tank. The influent tank was completely drained, and all accumulated sediment was removed. Upon completion, Train 2 was placed back in operation.

On January 20, 2021, the Train 2 influent tank level transducer failed, causing Train 2 to be shut down until the transducer was replaced on February 2, 2021; at that time, the train was placed back into operation. During Train 2 shut down, the influent water was temporarily rerouted through Train 1.

To facilitate the redevelopment of injection well KAFB-106IN2, the GWTS was intermittently shut down between January 29 and February 26, 2021.

From February 23 to February 24, 2021, extraction well KAFB-106239 was offline for rehabilitation, extraction well pump replacement, and well disinfection to maintain performance impacted by biofouling. Extraction well disinfection was performed in accordance with the approved Standard Operating Procedure (NMED, 2018c). Pre- and post-rehabilitation samples were analyzed for bromate and chlorite using EPA Method E300.1. Perchlorate was analyzed using EPA Method E331.0 in accordance with the approved analytical methods (NMED, 2018d). Bromate and chlorite were not detected in any samples. Perchlorate was detected at concentrations ranging from 0.15 to 0.51 µg/L, below the project screening level of 14 µg/L, in all samples (Appendix G-1, Table G-1-6). Perchlorate detections were comparable to naturally occurring perchlorate concentrations in the Middle Rio Grande Basin, which range from 0.12 to 1.8 µg/L (Plummer et al., 2006).

On February 26, 2021, Train 1 influent tank experienced a high-level alarm as a result of the plugging of the influent basket strainer which resulted in a full system shut down. The influent basket strainers were immediately cleaned, and the system was placed back into operation.

The GWTS O&M Plan requires GAC changeout when the effluent concentration of EDB reaches 90% of the 0.05 µg/L MCL to ensure that effluent from the GWTS continues to meet the MCL. On July 23, 2020, EDB was detected in the sample collected from Train 2 at the mid-GAC sample port at an estimated concentration of 0.011 µg/L (Kirtland AFB, 2020). The Train 2 effluent sample remained non-detect. Although not considered an actionable level as per the GWTS O&M Plan, it was decided to change out the GAC from an overabundance of caution. On March 2, 2021, the carbon media in the Train 2 GAC Tank B was removed and replaced with fresh media to continue conservative operation of the GWTS. This is considered non-routine maintenance because the changeout was not required by regulatory permits or plan and was conducted well before the effluent met actionable levels. Prior analytical data had consistently indicated the Train 2 effluent EDB concentrations as non-detect. All activities were conducted in accordance with the GWTS O&M Plan.

The carbon media used in the GAC vessels is virgin coconut carbon, which is the most efficient type of carbon at capturing EDB. Virgin coconut carbon is made from converting coconuts into activated carbon. The spent carbon removed during the changeout is trucked to a carbon reactivation facility where it undergoes a thermal process to remove the EDB. The reactivated carbon is restored to 95% efficiency and can be reused. Transportation manifests and reactivation documentation for the spent carbon are provided in Appendix G-1.

Following the changeout, the carbon was allowed to soak up clean water for a period of 24 hours, as required in the O&M Plan. On March 3, 2021, the Train 2 GAC Tank B was backwashed to remove carbon fines leftover from the changeout. Train 2 GAC Tank A was changed from lag tank to lead in order to capture EDB from the Train 2 influent. Following changeover, the Train 2 influent, mid-GAC, and effluent ports were sampled. Samples were analyzed for EDB, BTEX, dissolved iron, and dissolved manganese as required by the GWTS O&M Plan whenever significant process changes occur.

Train 2 daily sampling occurred from March 3 to March 10, 2021. Weekly Train 2 sampling occurred on March 10, 17, 24, and 31, 2021 (Table 5-8). Routine monthly sampling will continue for both trains. Concentrations of EDB, BTEX, and dissolved iron were not detected in any Train 2 mid-GAC or effluent samples. Dissolved manganese was detected below the project screening level of 0.2 mg/L in Train 2 effluent samples at estimated concentrations of 0.0054 mg/L on March 4, 0.0091 mg/L on March 6, 0.0061 mg/L on March 7, 0.0050 mg/L on March 8, 0.0059 mg/L on March 9, and 0.0044 mg/L on March 10, 2021. Dissolved manganese was not detected in any other Train 2 mid-GAC or effluent samples. Dissolved manganese was not detected in the other samples collected from Train 2 mid-GAC or effluent during the month of March 2021.

During Q1 2021, KAFB-106233 was intermittently turned offline to maintain water level at well KAFB-7 during injection.

6. WASTE MANAGEMENT

During Q1 2021, both hazardous and non-hazardous IDW were generated. This section discusses the details of waste generated, disposed of, and managed during the quarter.

The following activities generated IDW at the BFF site during Q1:

- Groundwater monitoring activities that generated both hazardous and non-hazardous liquid waste
- Installation of new monitoring wells that generated non-hazardous and hazardous liquids, as well as non-hazardous solid (soil) waste
- Non-hazardous solid IDW from the GWTS operation
- Solid waste generated during well sampling activities

6.1 Non-Hazardous Investigation-Derived Waste

Non-hazardous IDW liquid waste was generated from quarterly GWM sampling activities, and non-hazardous solid waste was generated during well drilling. Appendices H-1 and H-2 provide specific information regarding the non-hazardous liquid and solid IDW generated and disposed of during Q1 2021.

6.1.1 Groundwater Monitoring Liquid Investigation-Derived Waste

Non-hazardous IDW purge water collected during sampling of the GWM wells was placed in 55-gallon plastic drums. The drums were sealed with matching plastic lids with steel locking-ring collars, labeled with vinyl non-hazardous waste labels, and transferred to the designated non-hazardous IDW yard located on Kirtland AFB. Small volumes of IDW water, typically generated from passive sampling devices or sampling of drinking water wells, were placed in labeled, 5-gallon plastic buckets (pails) with sealing lids.

Eligibility for discharge of non-hazardous liquid IDW to the GWTS was determined by comparing historical, well-specific data from the previous two quarters to the acceptance criteria of the GWTS. Liquid IDW from monitoring wells that had historically met the GWTS acceptance criteria was discharged to the facility without further review. Liquid IDW sourced from wells with historical data from the previous two quarters that exceeded the GWTS acceptance criteria or displayed variations in data that warranted further reviews was held for further evaluation.

For Q1 2021, 163.5 gallons of non-hazardous water was generated from standard GWM activities and disposed of at the GWTS (Appendix H-1, Table H-1-1); there were no other liquids generated or disposed of from other sources in Q1 2021 (Appendix H-1, Table H-1-2). This waste met the GWTS acceptance criteria and was processed through the GWTS and discharged to the GCMP (Appendix H-1, Table H-1-1).

Some liquid IDW that was approved for GWTS disposal was not processed through the GWTS due to scheduling constraints, GWTS discharge limitations, and/or O&M activities. At the end of Q1 2012, 278 gallons of water originating from GWM and GWTS maintenance activities were temporarily accumulated in the “Pending Disposal” area of the IDW yard (Appendix H-1, Table H-1-3).

Non-hazardous liquid IDW that was collected but held pending receipt and evaluation of analytical data to determine if it met GWTS acceptance criteria was placed in the "Pending Analysis" area of the IDW yard. At the end of Q1 2021, 211.75 gallons of liquids were being held in this area (Appendix H-1, Table H-1-4).

6.1.2 Non-Hazardous Drilling Liquid Investigation-Derived Waste

In Q1 2021, 66 gallons of non-hazardous drilling-related liquid IDW generated during the development of well KAFB-106S10 was disposed of through the GWTS (Appendix H-1, Table H-1-5). In addition, 3,050 gallons of drilling-associated non-hazardous water sourced from well development/purging and equipment decontamination operations were held as "Pending Disposal" at the end of the quarter (Appendix H-1, Table H-1-6).

An additional 3,830 gallons of drilling-related liquids were held in Q1 2021 as "Pending Analysis" while awaiting laboratory analytical data to determine if the waste met the criteria for discharge through the GWTS. This non-hazardous water was sourced from well development and equipment decontamination operations (Appendix H-1, Table H-1-7).

6.1.3 Non-Hazardous Solid Waste

Solid waste was held in either 55-gallon steel drums with steel tops and locking rings or, depending on the total volume, in 20-yard capacity roll-off bins. Bin doors were sealed with an expanding foam to minimize the potential of leaks, and the bins were double lined with 10-millimeter plastic liners. Bins had either integrated hard cover tops with ratcheting straps or removable, heavy-duty vinyl covers that were secured to the bin using heavy-duty rubber straps to protect the contents from weather or access by local fauna. Drums were placed on secondary containment pallets, and roll-off bins were placed on secondary containment composed of plastic sheeting with berm or rolled edges.

Approximately 0.24 cubic yards of waste salt were generated from GWTS operations during the quarter. This waste was held in the "Pending Disposal" category until an appropriate off-Base disposal pathway was identified (Appendix H-2, Table H-2-2).

No non-hazardous solid waste was generated from GWM operations during Q1 2021 (Appendix H-2, Table H-2-1).

Routine, non-hazardous disposable solid waste was generated during GWM activities. This included single-use dual membrane samplers, disposable in-line filters, nitrile gloves, and paper trash. These items were disposed of as municipal solid waste, and volumes were not tracked.

6.1.4 Non-Hazardous Well Drilling Solid Investigation-Derived Waste

During Q1 2021, non-hazardous soil was generated and managed during the drilling of six GWM wells. Drilling operations were managed by both EA and Sundance Consulting, Inc. (Sundance) during this period. Drilling related waste was managed at independent IDW yards for each company. During Q1 2021, a total of 208 cubic yards of soil were collected, placed in lined and covered roll-off bins, and held in "Pending Disposal" status.

Of the 208 cubic yards of non-hazardous soil, 111 cubic yards were disposed of during Q1 2021 (Appendix H-2, Table H-2-4). Roll-off bins were authorized for disposal at the Kirtland AFB Construction and Demolition landfill (Appendix H-2, Table H-2-3). Of these 111 cubic yards, EA

coordinated the disposal of five roll-off bins containing 66 cubic yards of non-hazardous soil, and Sundance managed the disposal of three roll-off bins containing 45 cubic yards of non-hazardous soil.

6.1.5 Special Waste Well Drilling Solid Investigation-Derived Waste

Special waste is defined as petroleum-contaminated soil that has total petroleum hydrocarbon concentrations greater than 100 milligrams per kilogram (Subparagraph [i] of Paragraph [13] of Subsection S of NMAC 20.9.2.7). No special waste was generated or disposed of during Q1 2021 (Appendix H-2, Table H-2-5).

6.2 Hazardous Investigation-Derived Waste

Hazardous or potentially hazardous IDW was accumulated in one of two less than 90-day RCRA accumulation areas associated with the Kirtland BFF Project. Hazardous waste generated from routine GWM sampling or well maintenance activities (purge or well rehabilitation water) was placed in one of the two RCRA accumulation areas associated with the Kirtland BFF Project that hold waste for less than 90 days. Hazardous or potentially hazardous waste generated during drilling activities was held in the Kirtland AFB Zia Park temporary less than 90-day RCRA accumulation area.

The hazardous or potentially hazardous waste was held until final waste determination was made, either based on analytical confirmation data or generator knowledge. If the waste was verified to be hazardous, the IDW would remain in this accumulation area until it was removed from Kirtland AFB and properly disposed of off-Base. If the IDW was determined to not meet hazardous waste criteria, it was recategorized as non-hazardous and transferred to the "Pending Disposal" area of the non-hazardous IDW yard.

All hazardous waste must be removed from Kirtland AFB and properly disposed of off-Base within the required 90-day accumulation time limit. Hazardous waste was transported off of Kirtland AFB only after it was properly profiled, manifested, and approved for transport by the Kirtland AFB Environmental Restoration Group. Waste was transported by a licensed hazardous waste hauler to a permitted treatment, storage, and disposal facility.

6.2.1 Liquid Hazardous Investigation-Derived Waste

Prior to the start of the Q1 2021 GWM sampling event, an evaluation was made to identify monitoring wells that were anticipated to generate characteristically hazardous liquid IDW. This evaluation flagged wells that required purge water to be managed as "hazardous" from the point of generation and assisted in the initial waste segregation. Based on historical analytical data for each well, the water was suspected to be characteristically hazardous if the concentration of benzene exceeded 500 µg/L (per 40 CFR Part 261.24) in either of the previous two sampling events. The hazardous waste classification code for benzene is D018.

For monitoring wells located in the source area of the groundwater plume that show consistent data to indicate the purge water to be hazardous, "Generator Knowledge" was used for hazardous waste determination per RCRA regulations 40 CFR 262.11(d)(1).

Liquid hazardous waste originating in purging of wells prior to sampling or during well development was placed in 55-gallon steel drums with steel tops and locking rings (UN designation 1A2/Y1.2/100/**). When small volumes (less than 5 gallons) of waste were generated at a well, a plastic container with a threaded top (jerrican) was used to contain the liquid. The jerrican was then placed in a 55-gallon steel

drum for additional security. Waste containers were properly labeled, sealed, and placed on secondary containment pallets located within the appropriate less than 90-day RCRA accumulation area. The accumulation areas and waste containers were inspected on a weekly basis by trained personnel as required under 40 CFR 262.34.

When possible, liquid hazardous waste was consolidated. This was typically done to combine small volumes of waste generated during passive sampling activities at multiple well sites. Consolidation was also performed to reduce the total number of drums that require offsite disposal. Appendix H-3 provides specific information regarding the hazardous liquid waste disposed of during Q1 2021.

A total of 399 gallons of liquid hazardous waste was disposed of during Q1 2021 (Appendix H-3, Table H-3-1). Of this quantity, 227 gallons were sourced from GWM activities, and 172 gallons originated from monitoring well construction activities. Clean Earth provided transportation of the waste from Kirtland AFB to Chemical Reclamation Services, LLC in Avalon, Texas, a permitted hazardous waste disposal facility.

There was no liquid hazardous waste held in the "Pending Disposal" category at the end of Q1 2021 (Appendix H-3, Table H-3-2a).

6.2.2 Solid Hazardous Investigation-Derived Waste

Solid (soil) hazardous waste was determined by analytical concentrations of benzene equal to or greater than the RCRA characteristic regulatory limit of 5.0 milligrams per kilogram. Based on the extensive history of analytical data from SWMUs ST-106/SS-111, no other organic or inorganic characteristic hazardous waste compounds are applicable to this site.

At the end of Q1 2021, there was no hazardous soil drilling waste held in the "Pending Disposal" category (Appendix H-3, Table H-3-2b).

6.2.3 Quarterly Hazardous Investigation-Derived Waste Volume Totals

Appendix H-3, Table H-3-3 shows the quarterly total volume of liquid hazardous waste disposed of from the Kirtland AFB BFF through Q1 2021 is 399 gallons, which was manifested and properly disposed of. There was no solid (soil) hazardous waste generated or disposed of during Q1 2021.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Discussion and Conclusions

The following section summarizes the data collected during Q1 2021.

7.1.1 Groundwater Monitoring

Depth to water was measured in 166 wells in Q1 2021. Gauging data, including groundwater elevations and LNAPL thicknesses, are provided in Table 4-2. The horizontal groundwater gradient within the monitoring network was dominated by flow patterns toward depressions in the water table created by interim measure and Kirtland AFB groundwater extraction wells (Figure 4-2). In Q1 2021, groundwater elevations ranged from 4872.65 to 4877.59 ft above mean sea level.

During gauging, LNAPL was detected and measured in four wells located on-Base within the Source Area Plume (KAFB-106059, KAFB-106076, KAFB-106150-484, and KAFB-106154-484), consistent with previous quarters (Tables 4-2 and 4-4). LNAPL thickness ranged from 0.01 ft in KAFB-106059 and KAFB-106076 to 0.33 ft in KAFB-106150-484 (Figure 4-3). There were 16 wells with unsubmerged screens surrounding these wells where LNAPL was not detected, indicating that the extent of LNAPL was bounded during Q1 2021 (Figure 4-3).

Groundwater samples were collected from 68 GWM wells between January 4 and January 15, 2021 (Section 4.1.3). Groundwater analytical results for Q1 2021 are provided in Tables 4-6 through 4-8 and include comparisons to the project screening levels. EDB and BTEX results are posted on Figures 4-5 and 4-6. Consistent with previous quarters, the highest EDB and BTEX concentrations were observed in the Source Area Plume (Tables 4-9 and 4-10). Analytical results for inorganic compounds are provided in Tables 4-6 and 4-8.

7.1.2 Drinking Water Supply Well Monitoring

Analytical data for samples collected from drinking water supply wells are provided in Table 4-11. Consistent with previous monitoring events, neither EDB nor BTEX was detected in these samples (Appendix F-3) in Q1 2021.

7.1.3 Groundwater Treatment System Operation and Performance

During Q1 2021, the GWTS operated 93.3% of the time and treated 55,603,200 gallons of groundwater. The effluent was discharged to the GCMP and underground injection control wells KAFB-7 and KAFB-106IN2 (Table 5-4). An estimated 1.03 grams of EDB were removed by the GWTS during this quarter (Table 5-5).

Analytical results for effluent samples and the discharge limits for the GWTS are provided in Tables 5-6 and 5-7; concentrations for all analytes were below the laboratory reporting limit during this quarter.

7.2 Data Gaps

No data gaps were identified in Q1 2021. The installation of six nested water table wells was completed during the quarter to address a previous data gap created by well screens becoming submerged as a result of the water table rise. One of these new wells, KAFB-106S10-443, was sampled in Q1 2021; the remaining five wells will be incorporated into the GWM monitoring program in Q2 2021.

7.3 Recommendations

It is recommended that monitoring and GWTS operation continue in accordance with the schedules provided in the approved work plans (Section 3).

Q2 2021 will comprise the period between April 1 and June 30, 2021. The planned activities are summarized below.

Vadose Zone Monitoring:

- Perform semi-annual soil vapor monitoring

Groundwater Monitoring:

- Perform quarterly GWM
- Report quarterly monitoring of USGS sentinel wells (by USGS)

Drinking Water Supply Well Monitoring:

- Perform monthly sampling for analysis of organic compounds
- Perform sampling once for semi-annual analysis of inorganic compounds

Groundwater Treatment System Operation:

- Continue operating the GWTS and extraction wells KAFB-106228, KAFB-106233, KAFB-106234, and KAFB-106239
- Perform GWTS well disinfection as required
- Complete performance assessment of the GWTS extraction system

Reporting:

- Prepare a quarterly report to detail the activities conducted during the quarter

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NMAC. *State of New Mexico, Title 20.9.2 Solid Waste Management General Requirements*.

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NMED. 2016. Correspondence from Kathryn Roberts, Director, Resource Protection Division to Colonel Eric. H. Froehlich, Base Commander, Kirtland AFB, New Mexico, and Mr. John Pike, Director, Environmental Management Division, 377 MSG, Kirtland AFB, New Mexico, *re: Operation and Maintenance Plan, Groundwater Treatment System, Bulk Fuels Facility Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base*. EPA ID No. NM9570024423, HWB-KAFB-13-MISC. December 12.

NMED. 2017a. Correspondence from Juan Carlos Borrego, Deputy Secretary, Environment Department to Colonel Eric H. Froehlich, Base Commander, Kirtland AFB, New Mexico, and Lieutenant Colonel Wayne J. Acosta, Civil Engineer Office, Kirtland AFB, New Mexico, *re: Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 2, Bulk Fuels Facility Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base*. EPA ID No. NM9570024423, HWB-KAFB-13-MISC. May 31.

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NMED. 2018a. Correspondence from Mr. Juan Carlos Borrego, Deputy Secretary Environment Department, to Colonel Richard W. Gibbs, Base Commander, 377 ABW/CC, Kirtland AFB, New Mexico and Mr. Chris Segura, Chief, Installation Support Section, AFCEC/CZOW, Kirtland AFB, New Mexico, *re: Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling, Revision 2, Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico.* EPA ID No. NM9570024423, HWB-KAFB-13-MISC. February 23.

NMED. 2018b. Correspondence from Mr. Juan Carlos Borrego, Deputy Secretary Environment Department, to Colonel Richard W. Gibbs, Base Commander, 377 ABW/CC, Kirtland AFB, New Mexico and Mr. Chris Segura, Chief, Installation Support Section, AFCEC/CZOW, Kirtland AFB, New Mexico *re: Work Plan for Data Gap Monitoring Well Installation, Bulk Fuels Facility,* Solid Waste Management Unit ST-106/SS-111, Kirtland AFB, New Mexico. February 28.

NMED. 2018c. Correspondence from Ms. Michelle Hunter, Chief, Ground Water Quality Bureau, New Mexico Environment Department to Colonel Dawn A. Nickell, Base Vice Commander, 377 AB/CC, Kirtland AFB, NM *re: Conditional Approval of Standard Operating Procedure for Disinfection of the Groundwater Treatment System Remediation Wells and Groundwater Monitoring Wells, DP-1839, Bulk Fuels* Facility, Solid Waste Management Unit ST-106/SS-11, Kirtland Air Force Base. August 6.

NMED. 2018d. Personal Communication (email) from Mr. Andrew Romero, Environmental Scientist, Ground Water Quality Bureau, New Mexico Environment Department to Ms. Kate Lynnes, HQE, Senior Advisor Bulk Fuels Facility Project, Kirtland AFB, New Mexico *re*: *Approval of Proposed Analytical Methods, DP-1839.* November 16.

NMED. 2020a. Correspondence from Mr. Kevin Pierard, Chief, Hazardous Waste Bureau, to Colonel David S. Miller, Base Commander, 377 AB/CC, Kirtland AFB, NM and Lt. Colonel Wayne J. Acosta, Civil Engineer Office, 377 Civil Engineer Division, Kirtland AFB, NM, *re: Quarter Monitoring Report for April-June 2019, Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, New Mexico.* EPA ID# NM6213820974, HWB-KAFB-19-017. July 11.

NMED. 2020b. Correspondence from Mr. Kevin Pierard, Chief, Hazardous Waste Bureau, to Colonel David S. Miller, Base Commander, 377 AB/CC, Kirtland AFB, NM and Lt. Colonel Wayne J. Acosta, Civil Engineer Office, 377 Civil Engineer Division, Kirtland AFB, NM, *re: Reporting Requirements for All Document Submittals, Kirtland Air Force Base, New Mexico.* EPA ID# NM6213820974, HWB-KAFB-19-017. September 2.

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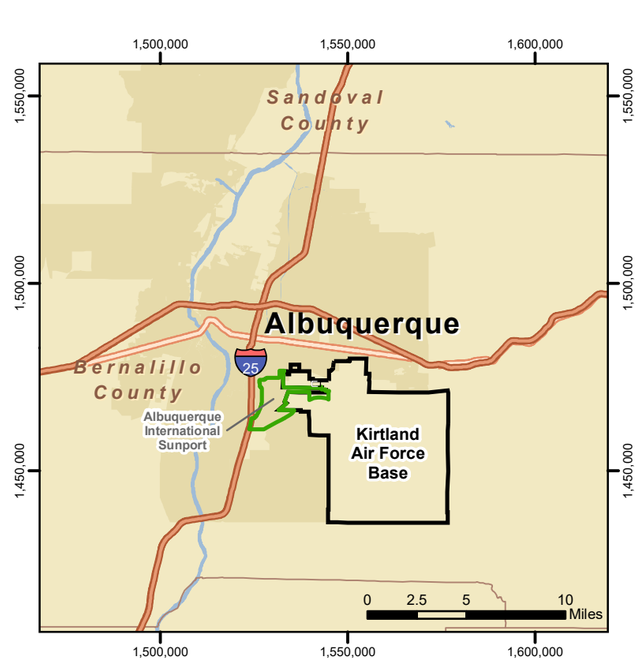
H Waste Disposal Documentation

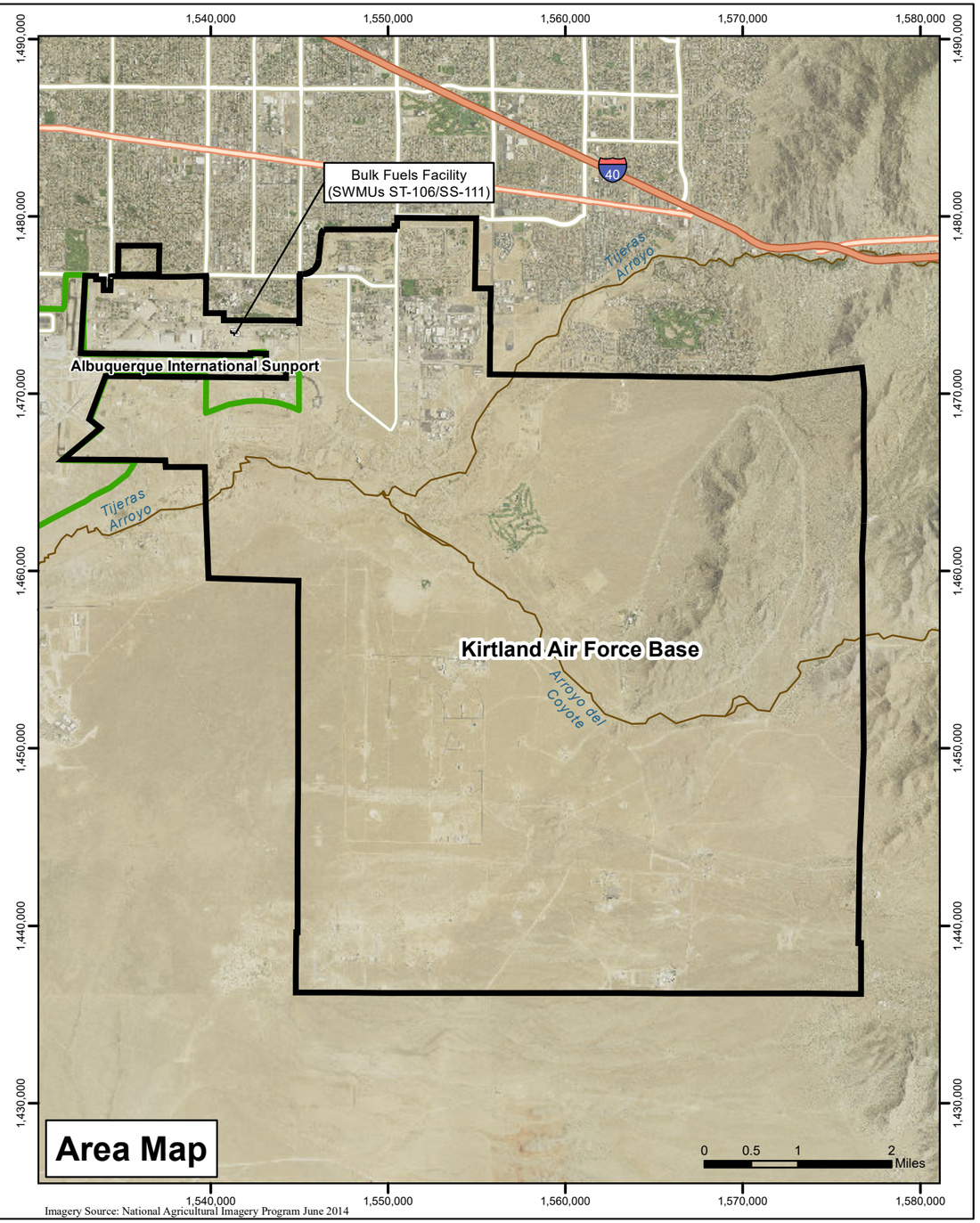
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Imagery Source: National Agricultural Imagery Program June 2014

Legend

- Kirtland Air Force Base Installation Boundary
- Albuquerque International Sunport Airport
- Major Highways
- Highways
- Major Roads
- Arroyos
- Rivers
- Source Area

N

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

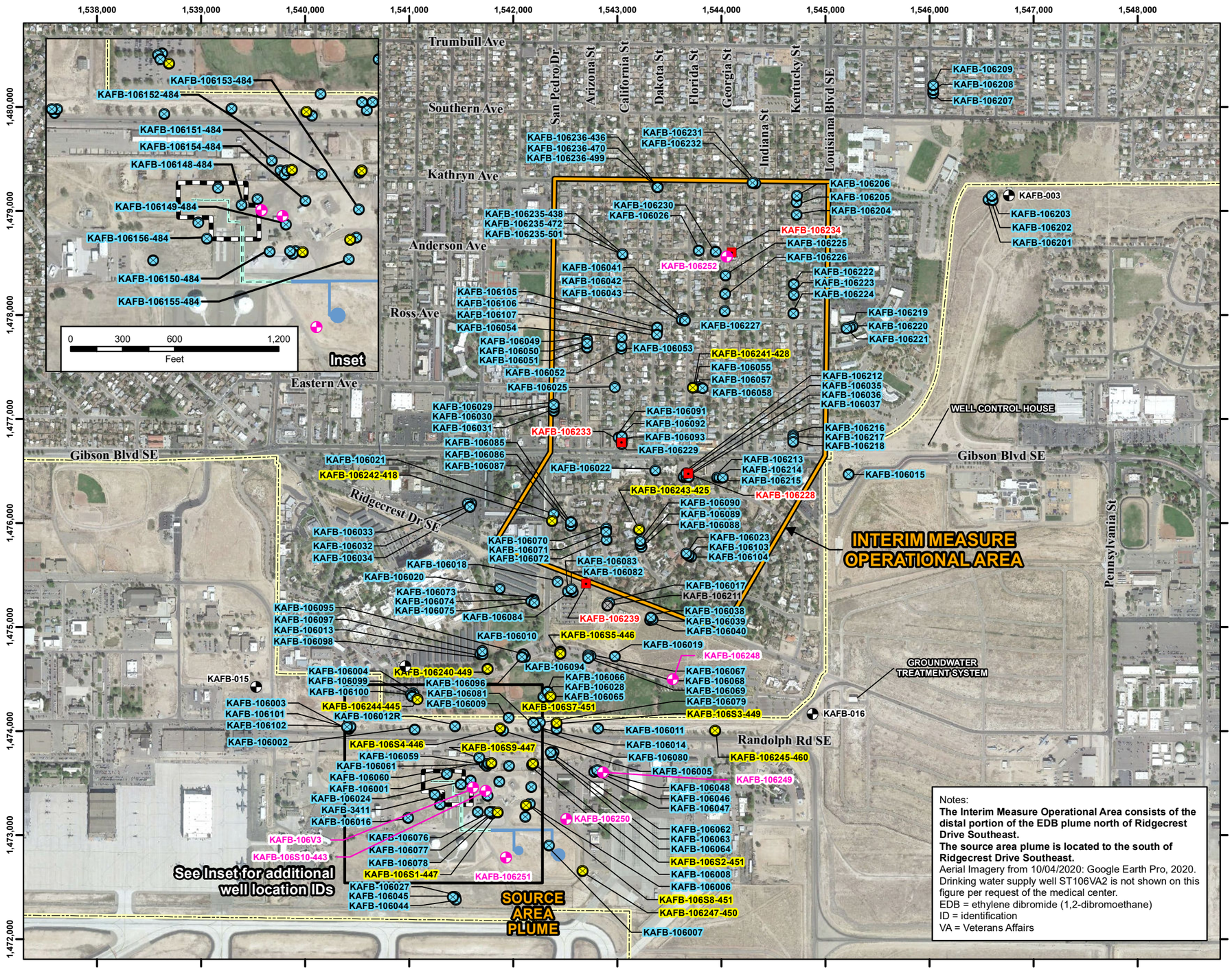
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FIGURE 1-1

SITE LOCATION MAP

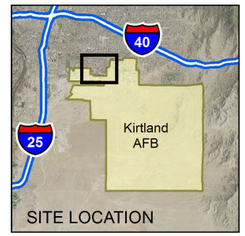
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Legend

- Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Monitoring Well (pending water table rise)
- Data Gap Well Installed in 2018 and 2019
- Well Installed between November 2020 and March 2021
- Former Aboveground Storage
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Interim Measure Operational Area
- Installation Fence Boundary
- Source Area



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
The source area plume is located to the south of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
Drinking water supply well ST106VA2 is not shown on this figure per request of the medical center.
EDB = ethylene dibromide (1,2-dibromoethane)
ID = identification
VA = Veterans Affairs

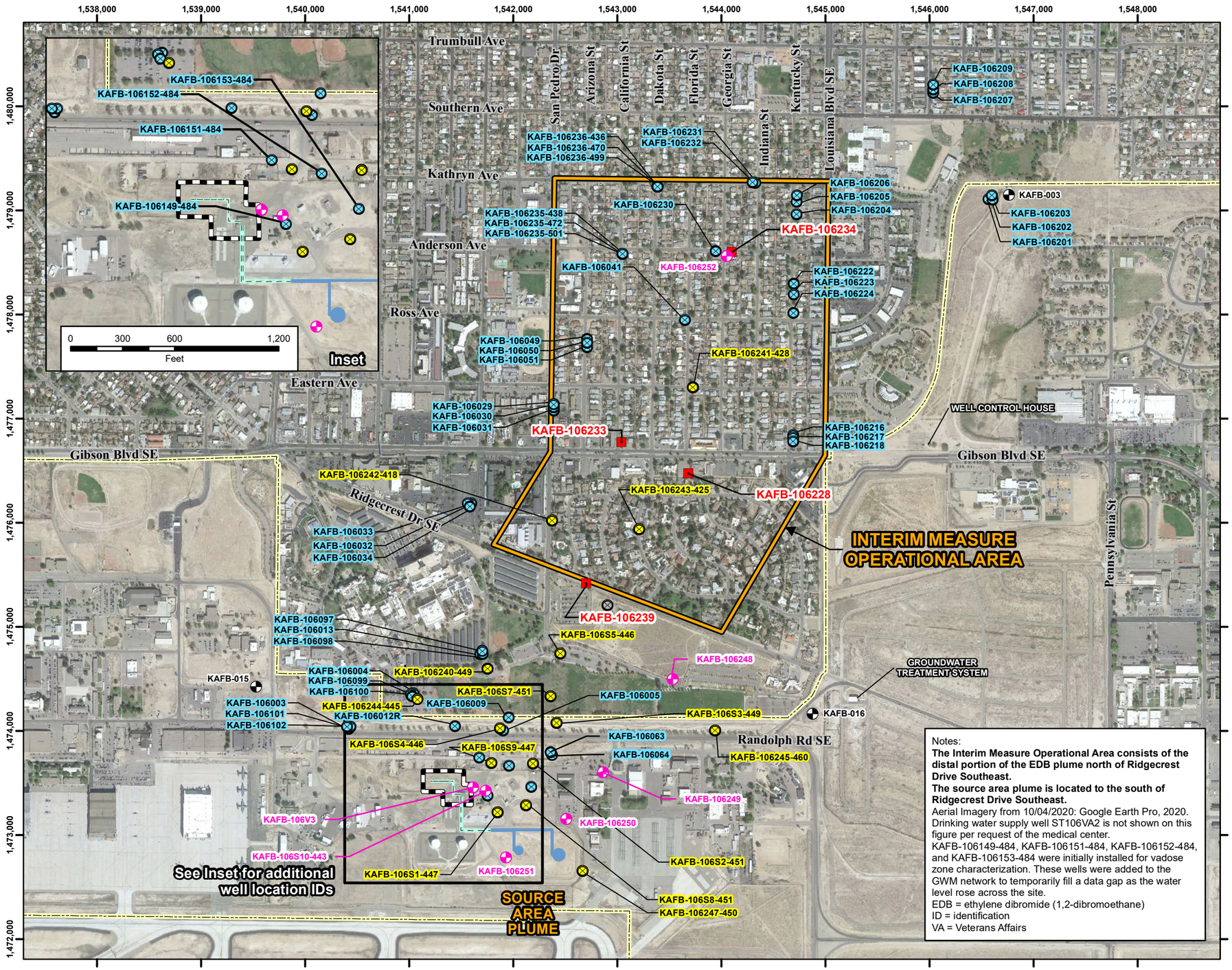
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FIGURE 4-1A

GROUNDWATER MONITORING NETWORK, DRINKING WATER SUPPLY WELL, AND EXTRACTION WELL LOCATIONS

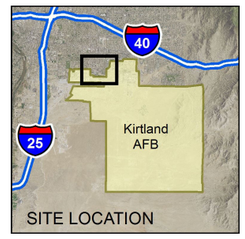
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Legend

- Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Monitoring Well (pending water table rise)
- Data Gap Well Installed in 2018 and 2019
- Well Installed between November 2020 and March 2021
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Interim Measure Operational Area
- Installation Fence Boundary
- Source Area



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
The source area plume is located to the south of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
Drinking water supply well ST106VA2 is not shown on this figure per request of the medical center.
KAFB-106149-484, KAFB-106151-484, KAFB-106152-484, and KAFB-106153-484 were initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.
EDB = ethylene dibromide (1,2-dibromoethane)
ID = identification
VA = Veterans Affairs

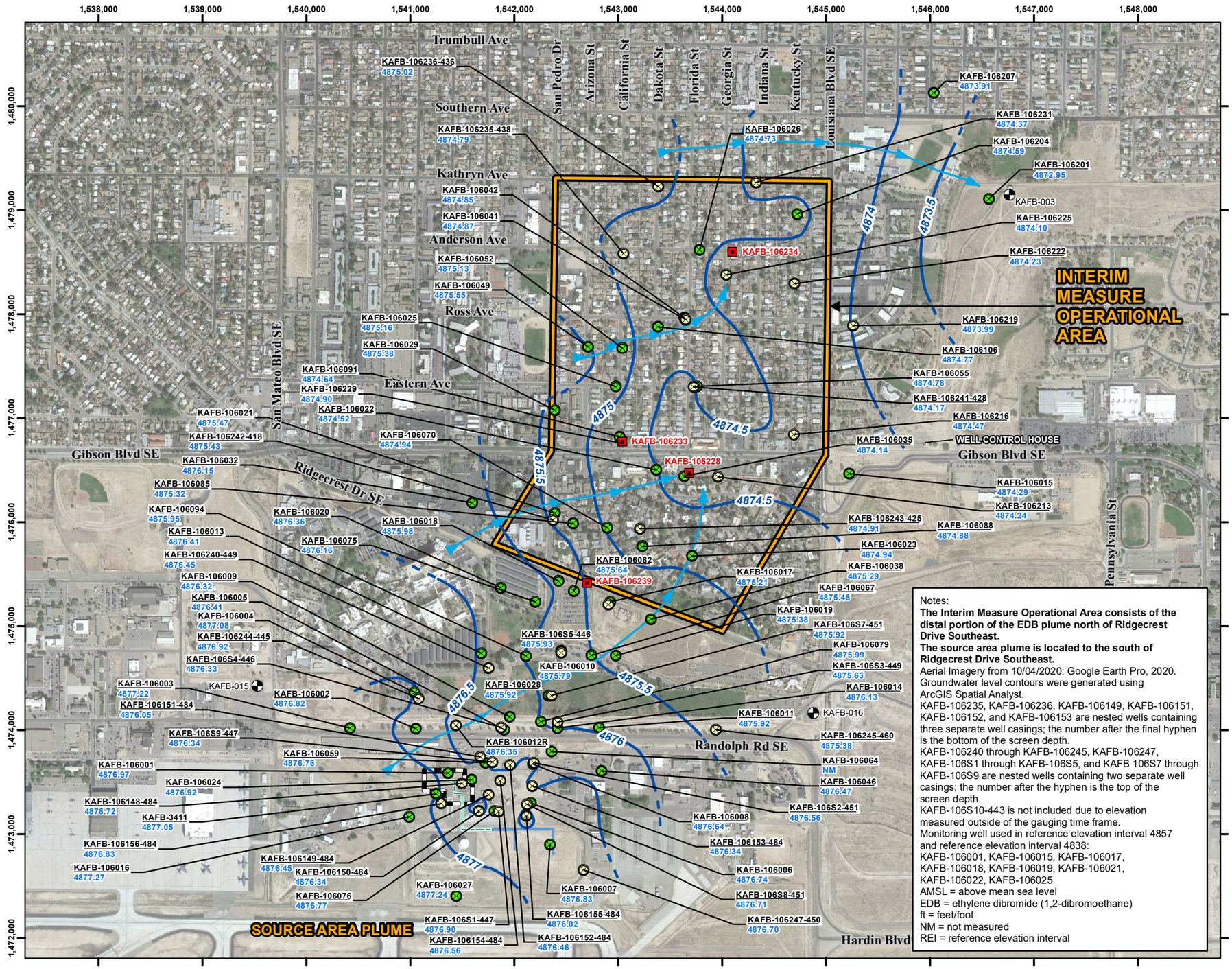
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FIGURE 4-1B

GROUNDWATER MONITORING NETWORK AND DRINKING WATER SUPPLY WELLS, Q1 2021

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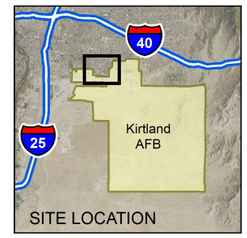


Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
The source area plume is located to the south of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
Groundwater level contours were generated using ArcGIS Spatial Analyst.
KAFB-106235, KAFB-106236, KAFB-106149, KAFB-106151, KAFB-106152, and KAFB-106153 are nested wells containing three separate well casings; the number after the final hyphen is the bottom of the screen depth.
KAFB-106240 through KAFB-106245, KAFB-106247, KAFB-106S1 through KAFB-106S5, and KAFB 106S7 through KAFB-106S9 are nested wells containing two separate well casings; the number after the hyphen is the top of the screen depth.
KAFB-106S10-443 is not included due to elevation measured outside of the gauging time frame.
Monitoring well used in reference elevation interval 4857 and reference elevation interval 4838:
KAFB-106001, KAFB-106015, KAFB-106017, KAFB-106018, KAFB-106019, KAFB-106021, KAFB-106022, KAFB-106025
AMSL = above mean sea level
EDB = ethylene dibromide (1,2-dibromoethane)
ft = feet/foot
NM = not measured
REI = reference elevation interval

Legend

- REI 4857 Monitoring Well (screens not submerged)
- REI 4857 and REI 4857/4838 Groundwater Monitoring Wells with Fully Submerged Screens
- Drinking Water Supply Well
- Extraction Well
- Groundwater Level Contour (ft AMSL)
- Inferred Groundwater Level Contour (ft AMSL)
- Groundwater Flow Direction
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer
- Interim Measure Operational
- Installation Fence Boundary
- Source Area

4877.69 Groundwater Elevation (ft AMSL)



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

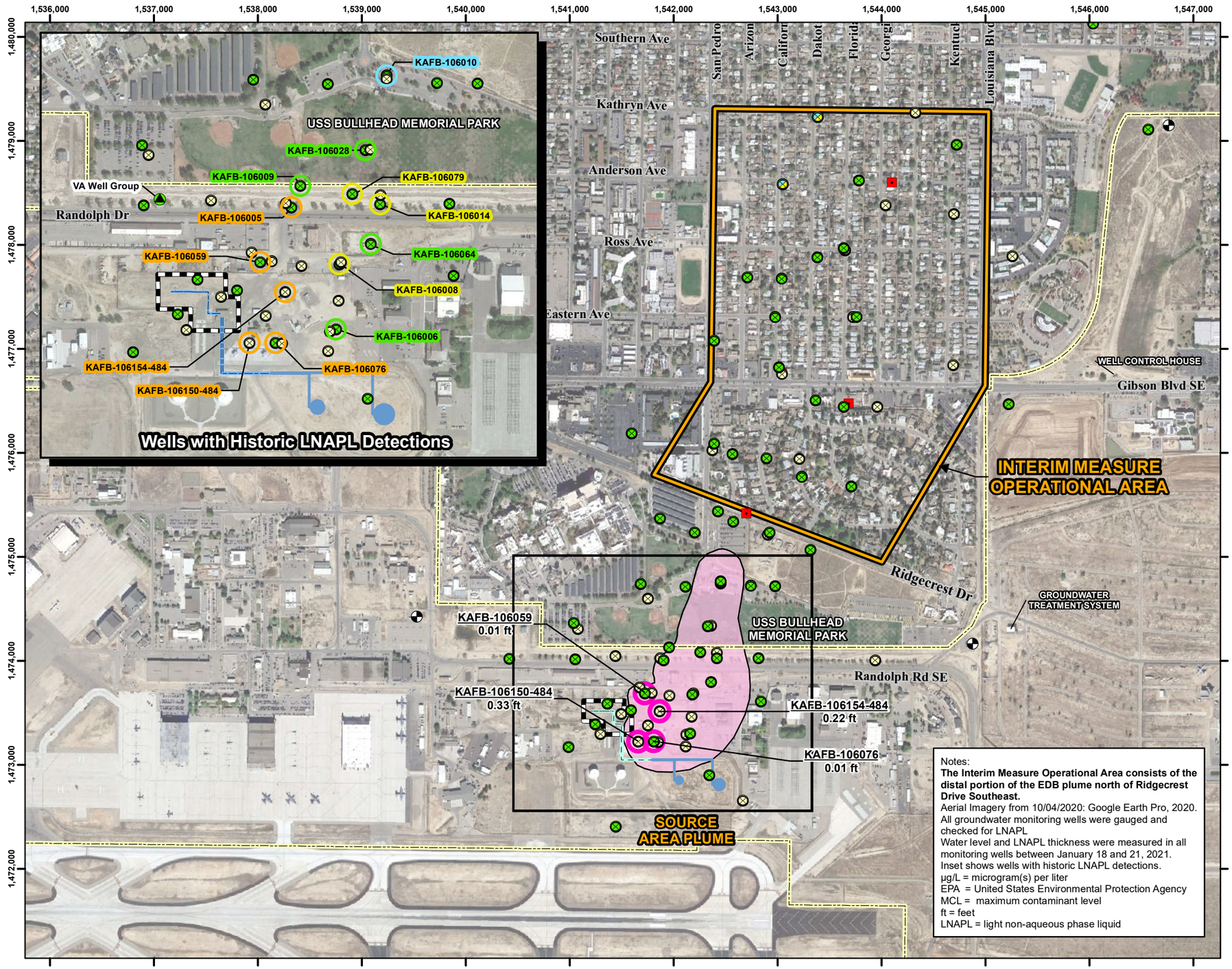
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FIGURE 4-2

POTENTIOMETRIC SURFACE, REFERENCE ELEVATION INTERVAL 4857, JANUARY 18 - 21, 2021

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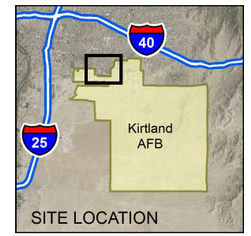


Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
All groundwater monitoring wells were gauged and checked for LNAPL
Water level and LNAPL thickness were measured in all monitoring wells between January 18 and 21, 2021.
Inset shows wells with historic LNAPL detections.
µg/L = microgram(s) per liter
EPA = United States Environmental Protection Agency
MCL = maximum contaminant level
ft = feet
LNAPL = light non-aqueous phase liquid

Legend

- Monitoring Well with Confirmed LNAPL in Q1 2021
- Well with measurable LNAPL in 2020 (Inset Map)
- Well with LNAPL last measured between 1 and 5 years ago (Inset Map)
- Well with LNAPL last measured between 5 and 10 years ago (Inset Map)
- Well with LNAPL last measured greater than 10 years ago (Inset Map)
- Reference Elevation Interval 4857 Groundwater Monitoring Well with top of screen unsubmerged
- Reference Elevation Interval 4857 and 4857/4838 Groundwater Monitoring Well with fully submerged screens
- Nested Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer
- Benzene Plume, Q4 2020 ≥5 µg/L (EPA MCL) in the Source Area Plume
- Interim Measure Operational
- Installation Fence Boundary
- Source Area

Well Location ID
LNAPL Thickness (ft)



N

0 500 1,000 2,000
Feet
1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

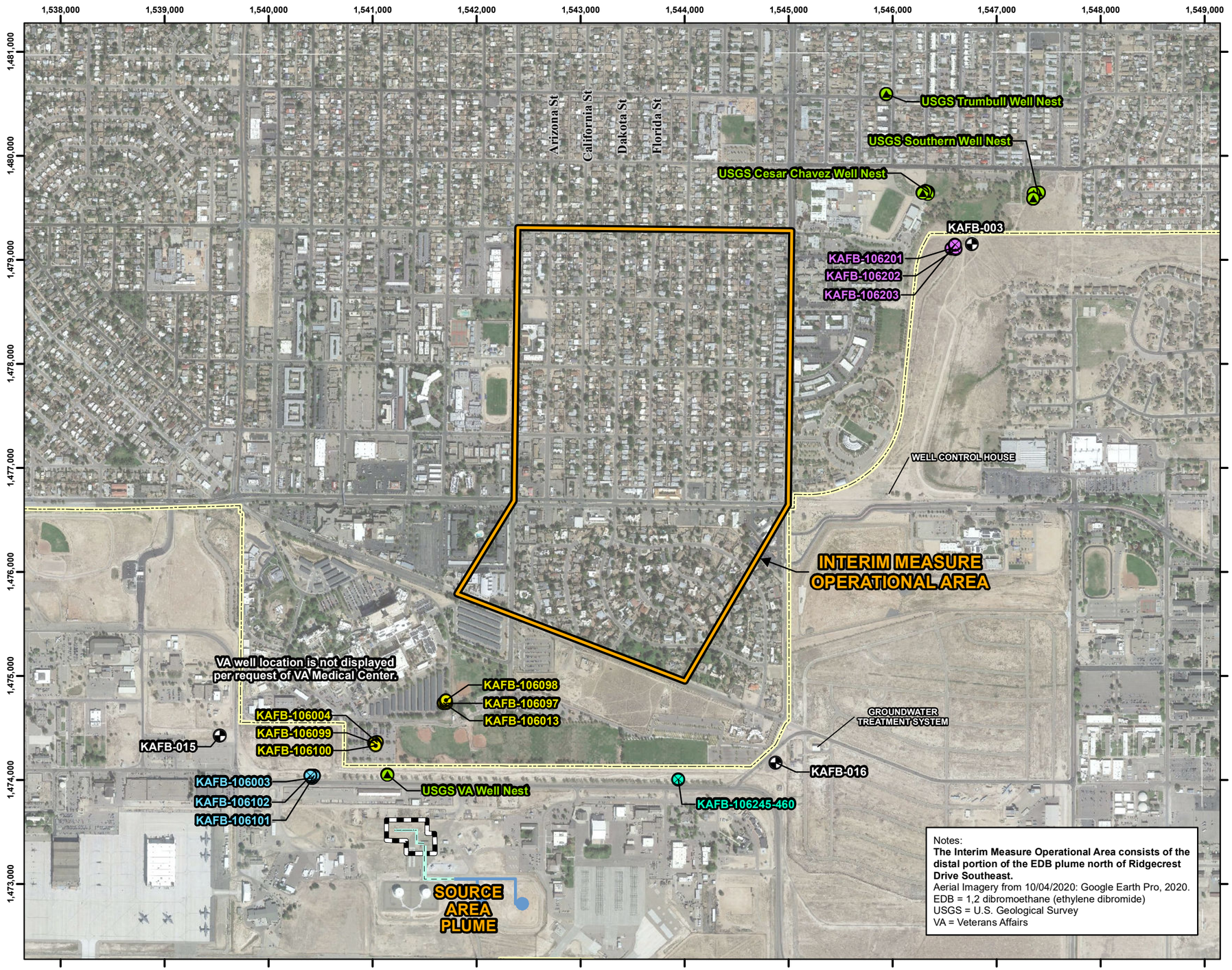
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FIGURE 4-3

GROUNDWATER MONITORING WELLS WITH MEASURABLE LIGHT NON-AQUEOUS PHASE LIQUID, Q1 2021

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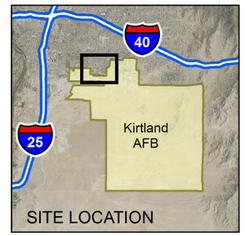
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Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
EDB = 1,2 dibromoethane (ethylene dibromide)
USGS = U.S. Geological Survey
VA = Veterans Affairs

Legend

- KAFB-016 Sentinel
- KAFB-003 Sentinel
- VA Proximal and KAFB-015 Sentinel
- Drinking Water Supply Well
- USGS Sentinel
- VA Proximal
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Interim Measure Operational Area
- Source Area



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

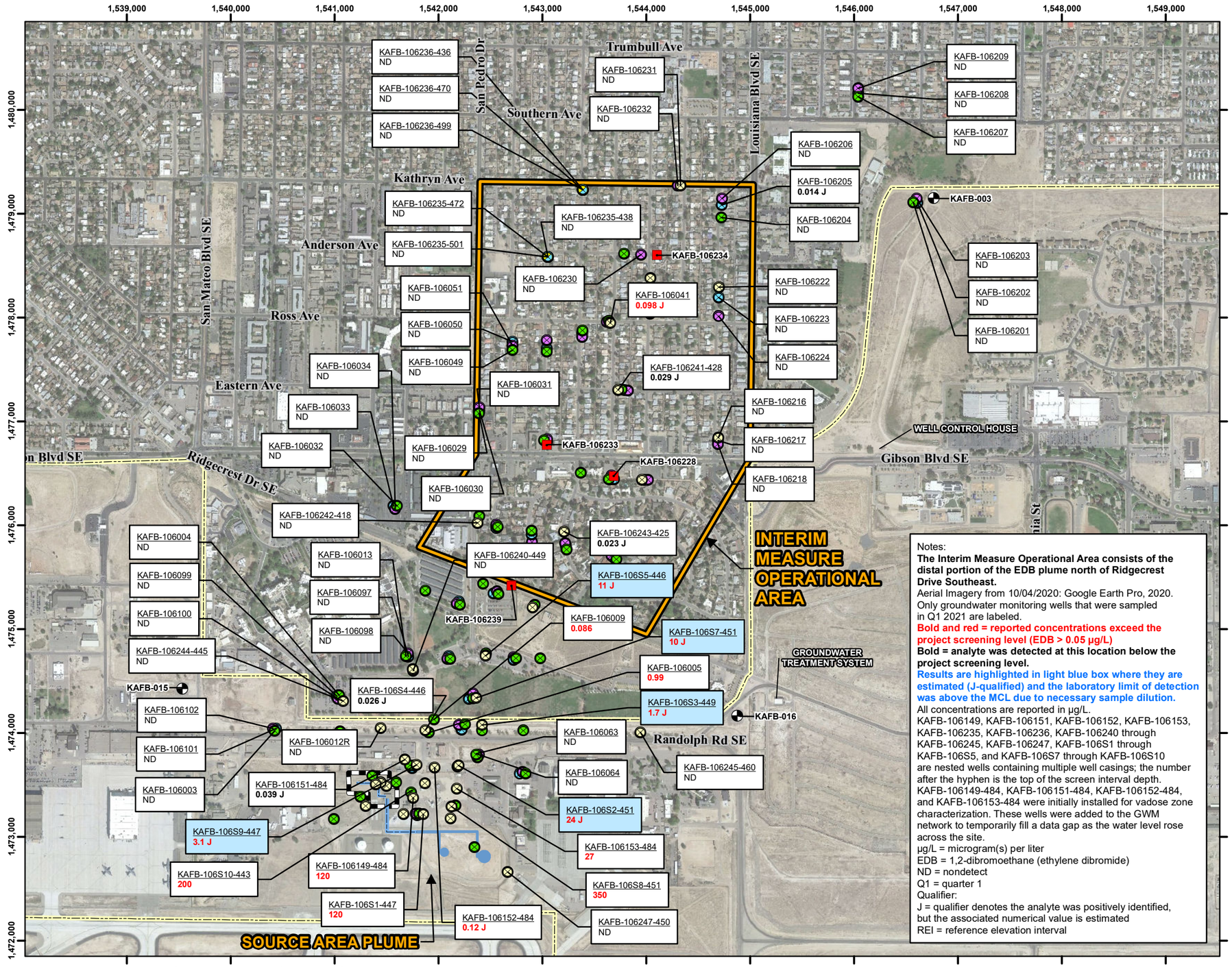
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FIGURE 4-4

SENTINEL AND PROXIMAL WELL LOCATIONS

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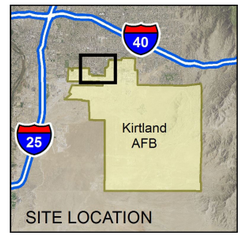
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Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
Only groundwater monitoring wells that were sampled in Q1 2021 are labeled.
Bold and red = reported concentrations exceed the project screening level (EDB > 0.05 µg/L)
Bold = analyte was detected at this location below the project screening level.
Results are highlighted in light blue box where they are estimated (J-qualified) and the laboratory limit of detection was above the MCL due to necessary sample dilution.
All concentrations are reported in µg/L.
KAFB-106149, KAFB-106151, KAFB-106152, KAFB-106153, KAFB-106235, KAFB-106236, KAFB-106240 through KAFB-106245, KAFB-106247, KAFB-106S1 through KAFB-106S5, and KAFB-106S7 through KAFB-106S10 are nested wells containing multiple well casings; the number after the hyphen is the top of the screen interval depth.
KAFB-106149-484, KAFB-106151-484, KAFB-106152-484, and KAFB-106153-484 were initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.
µg/L = microgram(s) per liter
EDB = 1,2-dibromoethane (ethylene dibromide)
ND = nondetect
Q1 = quarter 1
Qualifier:
J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated
REI = reference elevation interval

Legend

- REI 4857 Groundwater Monitoring Well with top of screen unsubmerged
- REI 4857 and REI 4857/4838 Groundwater Monitoring Well with fully submerged screens
- REI 4838 Groundwater Monitoring Well
- REI 4814 Groundwater Monitoring Well
- Nested Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer
- Interim Measure Operational
- Installation Fence Boundary
- Source Area



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

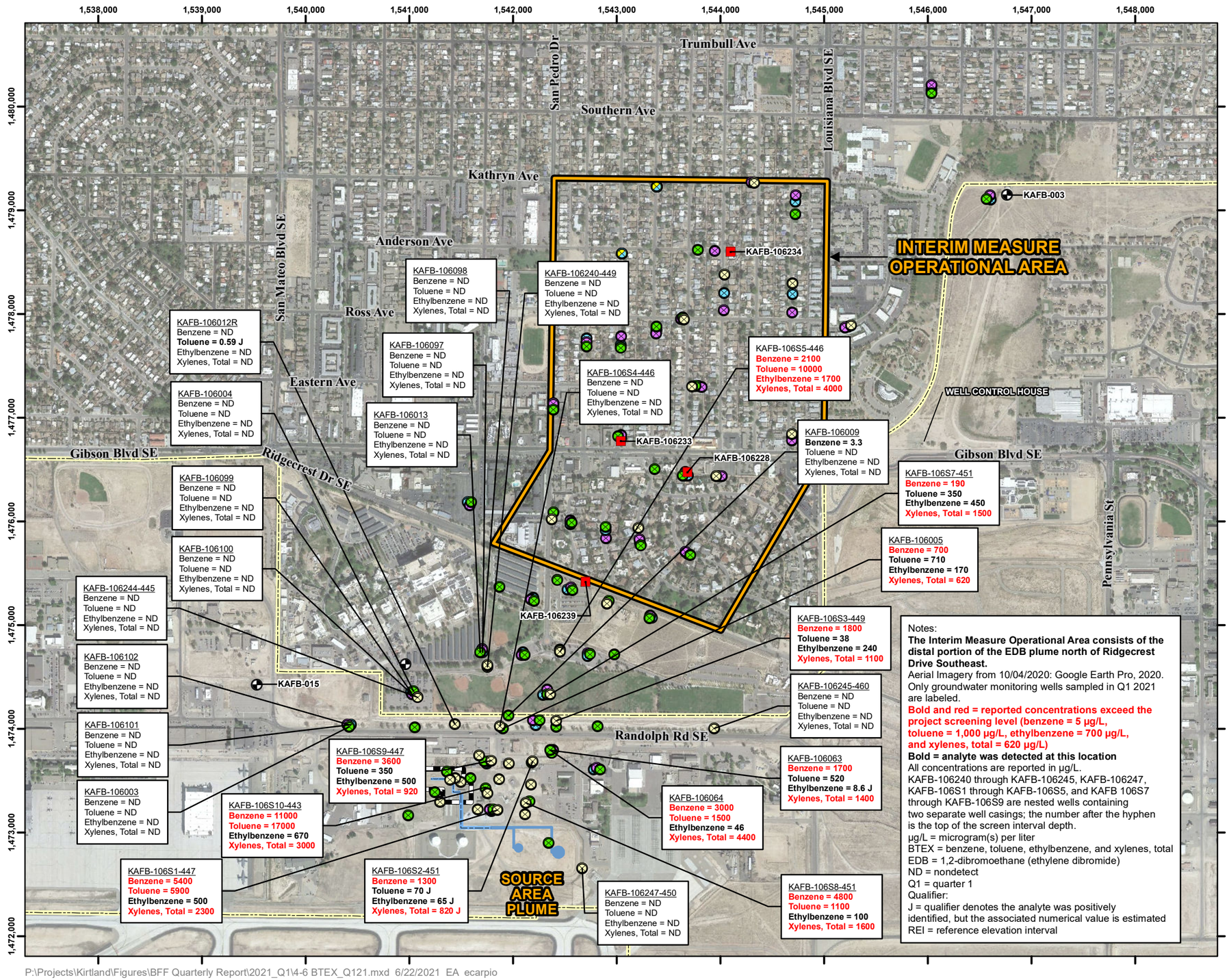
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JANUARY - MARCH 2021
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-5

1,2-DIBROMOETHANE CONCENTRATIONS, Q1 2021

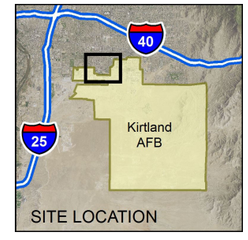
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Legend

- REI 4857 Groundwater Monitoring Well with top of screen unsubmerged
- REI 4857 and REI 4857/4838 Groundwater Monitoring Well with fully submerged screens
- REI 4838 Groundwater Monitoring Well
- REI 4814 Groundwater Monitoring Well
- Nested Groundwater Monitoring Well
- Drinking Water Supply Well
- Extraction Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer
- Interim Measure Operational
- Installation Fence Boundary
- Source Area



Notes:

The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.

Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.

Only groundwater monitoring wells sampled in Q1 2021 are labeled.

Bold and red = reported concentrations exceed the project screening level (benzene = 5 µg/L, toluene = 1,000 µg/L, ethylbenzene = 700 µg/L, and xylenes, total = 620 µg/L)

Bold = analyte was detected at this location

All concentrations are reported in µg/L.

KAFB-106240 through KAFB-106245, KAFB-106247, KAFB-106S1 through KAFB-106S5, and KAFB 106S7 through KAFB-106S9 are nested wells containing two separate well casings; the number after the hyphen is the top of the screen interval depth.

µg/L = microgram(s) per liter

BTEX = benzene, toluene, ethylbenzene, and xylenes, total

EDB = 1,2-dibromoethane (ethylene dibromide)

ND = nondetect

Q1 = quarter 1

Qualifier:

J = qualifier denotes the analyte was positively identified, but the associated numerical value is estimated

REI = reference elevation interval

N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

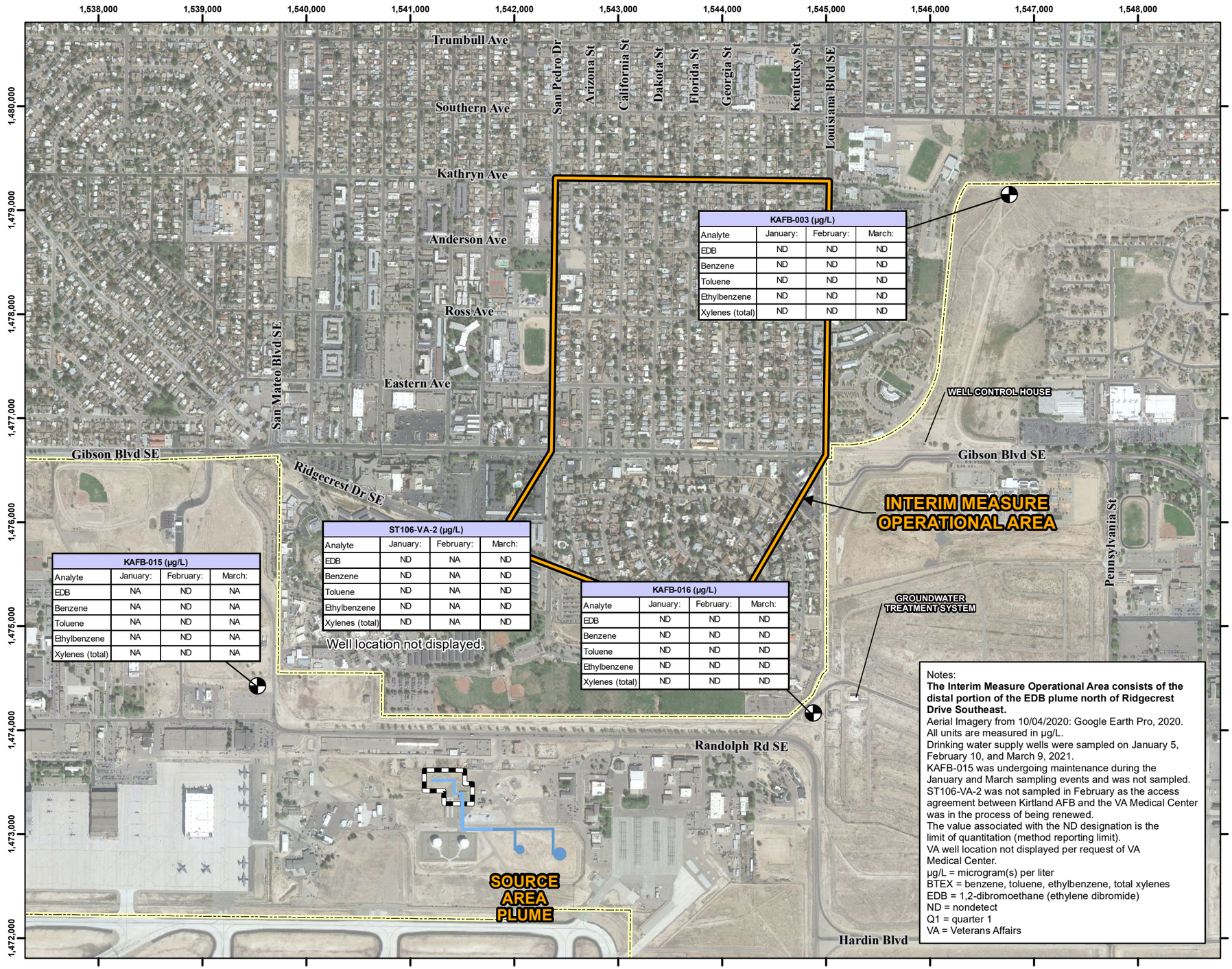
PERIODIC MONITORING REPORT
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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-6

BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENE CONCENTRATIONS, Q1 2021

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KAFB-003 (µg/L)			
Analyte	January:	February:	March:
EDB	ND	ND	ND
Benzene	ND	ND	ND
Toluene	ND	ND	ND
Ethylbenzene	ND	ND	ND
Xylenes (total)	ND	ND	ND

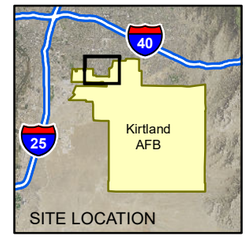
KAFB-015 (µg/L)			
Analyte	January:	February:	March:
EDB	NA	ND	NA
Benzene	NA	ND	NA
Toluene	NA	ND	NA
Ethylbenzene	NA	ND	NA
Xylenes (total)	NA	ND	NA

ST106-VA-2 (µg/L)			
Analyte	January:	February:	March:
EDB	ND	NA	ND
Benzene	ND	NA	ND
Toluene	ND	NA	ND
Ethylbenzene	ND	NA	ND
Xylenes (total)	ND	NA	ND

KAFB-016 (µg/L)			
Analyte	January:	February:	March:
EDB	ND	ND	ND
Benzene	ND	ND	ND
Toluene	ND	ND	ND
Ethylbenzene	ND	ND	ND
Xylenes (total)	ND	ND	ND

Legend

- Drinking Water Supply Wells
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Interim Measure Operational Area
- Installation Fence Boundary
- Source Area



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast.
Aerial Imagery from 10/04/2020: Google Earth Pro, 2020.
All units are measured in µg/L.
Drinking water supply wells were sampled on January 5, February 10, and March 9, 2021.
KAFB-015 was undergoing maintenance during the January and March sampling events and was not sampled.
ST106-VA-2 was not sampled in February as the access agreement between Kirtland AFB and the VA Medical Center was in the process of being renewed.
The value associated with the ND designation is the limit of quantitation (method reporting limit).
VA well location not displayed per request of VA Medical Center.
µg/L = microgram(s) per liter
BTEX = benzene, toluene, ethylbenzene, total xylenes
EDB = 1,2-dibromoethane (ethylene dibromide)
ND = nondetect
Q1 = quarter 1
VA = Veterans Affairs

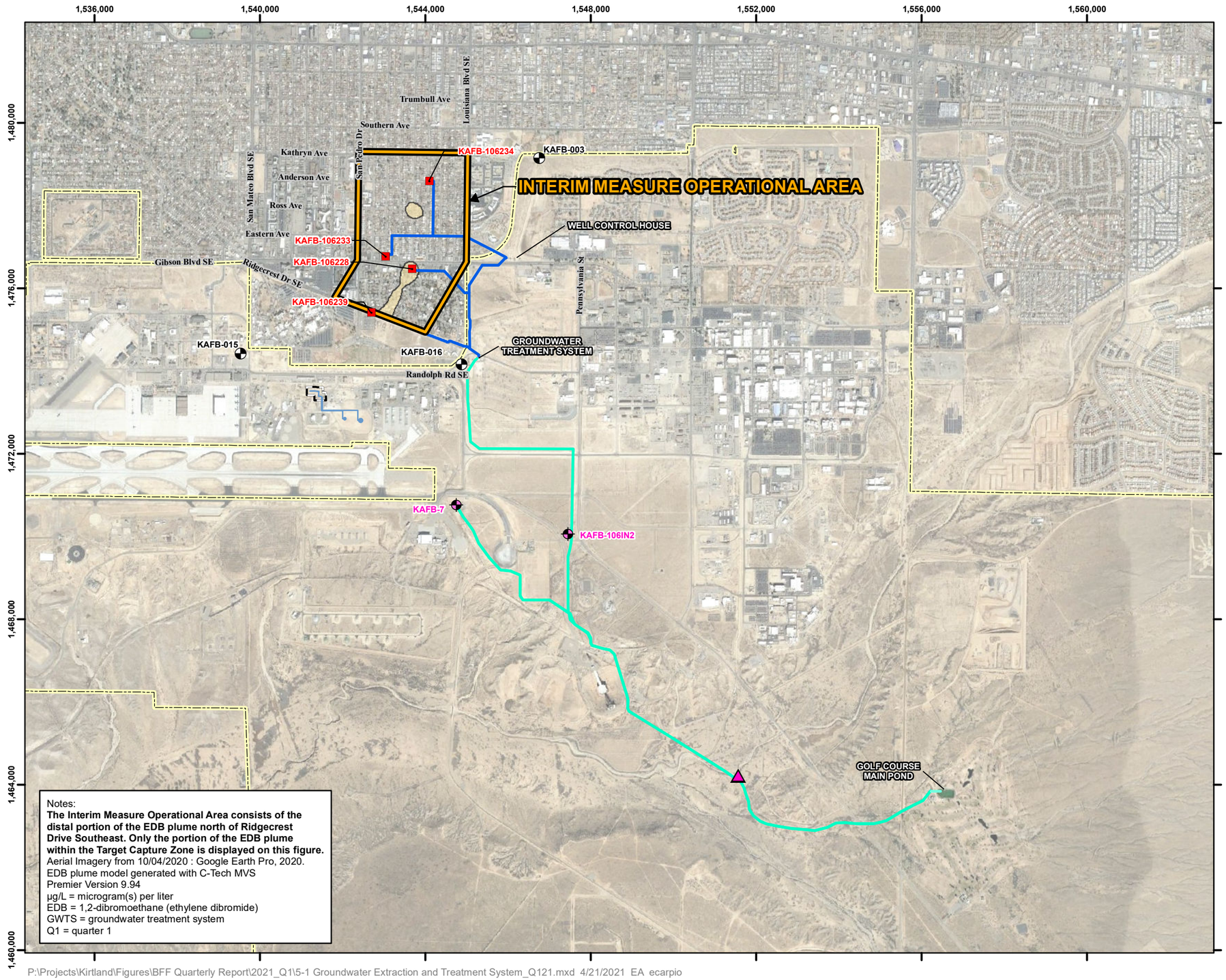
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FIGURE 4-7

1,2-DIBROMOETHANE AND BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENE RESULTS IN DRINKING WATER SUPPLY WELLS, Q1 2021

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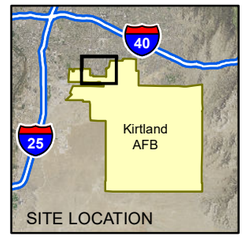


Notes:
The Interim Measure Operational Area consists of the distal portion of the EDB plume north of Ridgecrest Drive Southeast. Only the portion of the EDB plume within the Target Capture Zone is displayed on this figure.
Aerial Imagery from 10/04/2020 : Google Earth Pro, 2020.
EDB plume model generated with C-Tech MVS Premier Version 9.94
µg/L = microgram(s) per liter
EDB = 1,2-dibromoethane (ethylene dibromide)
GWTS = groundwater treatment system
Q1 = quarter 1

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Legend

- Injection Well
- Extraction Well
- Drinking Water Supply Well
- NPDES Outfall Location
- Former Aboveground Storage Tank
- Former Fuel Transfer Line
- GWTS Influent Piping
- GWTS Effluent Piping
- Interim Measure Operational
- Installation Fence Boundary
- Source Area
- EDB Plume within the Target Capture Zone Q4 2020 (> 0.05 µg/L)



N

0 1,250 2,500 5,000

Feet

1 inch = 2,500 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-1

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM LOCATION

TABLES

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Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
Groundwater Monitoring Wells[b]						
KAFB-106001	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106002	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106003	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal, KAFB-015 Sentinel
KAFB-106004	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106005	South	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106006	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106007	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106008	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106009	South	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106010	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106011	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106012R	South	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106013	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106014	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106015[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106016	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106017	South	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106018	South	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106019	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106020	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106021[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106022[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106023[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106024	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106025[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106026[c,d]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106027	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106028	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106029[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106030[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106031[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106032[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106033[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106034[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106035[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well
KAFB-106036[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well
KAFB-106037[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well
KAFB-106038	South	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106039	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106040	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106041[c]	North	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106042[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106043[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106044	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106045	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106046	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106047	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106048	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106049[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106050[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106051[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106052[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106053[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106054[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106055[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106057[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106058[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106059	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106060	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106061	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106062	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106063	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106064	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106065	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106066	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106067	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106068	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106069	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106070[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106071[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106072[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106073	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106074	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106075	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106076	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106077	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106078	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106079	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106080	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106081	South	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106082	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106083	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106084	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106085[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106086[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106087[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106088[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106089[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106090[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106091[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106092[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106093[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106094	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106095	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106096	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106097	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106098	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106099	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106100	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106101	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal, KAFB-015 Sentinel
KAFB-106102	South	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal, KAFB-015 Sentinel

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106103[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106104[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106105[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106106[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106107[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106149-484[c,e]	South	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106151-484[c,e]	South	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106152-484[c,e]	South	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106153-484[c,e]	South	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106201[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106202[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106203[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106204[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106205[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106206[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106207[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106208[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106209[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106211[f]	South	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106212[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106213[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106214[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106215[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106216[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106217[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106218[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106219[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106220[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106221[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106222[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106223[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106224[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106225[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106226[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106227[c]	North	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106229[c,g]	North	None	EDB	None	EDB	Groundwater well paired with KAFB-106233 extraction well
KAFB-106230[c,d]	North	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106231[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106232[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-438[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-472[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-501[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-436[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-470[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-499[c]	North	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106240-449[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	VA Proximal
KAFB-106241-428[c]	North	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106242-418[c]	North	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106243-425[c]	North	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106244-445[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	VA Proximal
KAFB-106245-460[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	KAFB-016 Sentinel
KAFB-106247-450[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)

Table 4-1
Groundwater Monitoring Program

Well Location ID	Well Location Relative to Ridgecrest Drive SE	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Current Monitoring Well Objective[a]
KAFB-106248-452[h]	North	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106249-416[h]	South	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106250-413[h]	South	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106251-409[h]	South	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106252-425[h]	North	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106S1-447[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S2-451[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S3-449[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S4-446[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S5-446[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S7-451[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S8-451[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S9-447[c]	South	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106S10-443[h]	South	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	VOCs, EDB, GRO, DRO, metals, anions, alkalinity, FP	Source Area
KAFB-3411	South	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring

Table 4-1
Groundwater Monitoring Program

[a] Monitoring Well Objective:

Downgradient Proximal (Seasonal) Wells—Primarily located north of Ridgecrest Drive SE surrounding the historical EDB plume to the north and east into the distal portion of the GWM network. One well located to the south and east of the Benzene plume. Groundwater flow direction varies seasonally; these wells are downgradient of the EDB plume during part of each year. Analytical data for these wells have been historically below the MCL for EDB. Sampled every quarter. These wells assist in plume boundary definition.

Former Downgradient Proximal; Current Upgradient Wells—Primarily located north of Ridgecrest Drive SE to the west and north of the historical EDB plume. These wells were previously downgradient of the historical EDB plume, but as groundwater flow direction has shifted, they are currently upgradient. Sampled every quarter.

Groundwater Monitoring Wells—Primarily located north of Ridgecrest Drive SE within the historical footprint of the EDB plume. Analytical data from these wells help to estimate the volume and mass of the EDB plume throughout the GWM network. Sampled in Q2 and Q4 at a minimum, with wells previously designated as newly added sampled every quarter.

KAFB-003 Sentinel Wells—One set of nested wells located west of drinking water production well KAFB-003. Sampled every quarter. These wells help to assess any potential contaminant migration towards KAFB-003.

KAFB-015 Sentinel Wells—One set of nested wells located east of drinking water production well KAFB-015. Sampled every quarter. These wells help to assess any potential contaminant migration towards KAFB-015.

KAFB-016 Sentinel Well—One well located west of drinking water production well KAFB-016. Sampled every quarter. This well helps to assess the potential for contaminant migration towards KAFB-016.

Paired wells—Wells located near a GWM IM extraction well to assess the quality of the water entering the extraction well.

Signal Wells—Three wells located along the south side of Ridgecrest Drive SE to monitor BTEX and provide early indication if the benzene plume is migrating from the source area into the interim measure target area capture zone created by the groundwater extraction wells. Sampled during Q2 and Q4.

Source Area Wells—Primarily located in the Bulk Fuels Facility south of Randolph Road SE and proximal to the spill site on-Base. Sampled during Q2 and Q4 at a minimum, with some sampled every quarter. These wells monitor the higher concentrations of dissolved-phase plumes on-Base.

Veterans Affairs (VA) Proximal Wells—Three sets of nested wells located between the historical EDB plume south of Ridgecrest Drive SE and the Raymond G. Murphy VA Medical Center as a means to observe for potential contaminant migration towards the VA medical campus. Sampled every quarter. These wells provide additional wellhead protection monitoring for the VA supply well.

[b] The groundwater monitoring network consists of 163 wells, 162 wells that are currently sampled (see note "f", below), and one well which will be sampled once water level has risen sufficiently (note "e"). Select wells are identified for additional or more frequent monitoring of risk-driving constituents. Metals analysis consists of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium) and select dissolved metals (iron and manganese). Anions analysis consists of bromide, chloride, nitrate/nitrite nitrogen, and sulfate. Field parameters include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.

Newly Added Wells—Newly added wells can include both existing wells that are added to the GWM network as well as newly installed wells. Newly added GWM wells require a minimum of four quarters of baseline full-suite analytical sampling. These wells have been added to assess the plume boundaries and provide additional water table monitoring due to the rising groundwater elevation.

Groundwater Monitoring Wells—Wells which have completed the minimum, baseline full-suite analytical sampling. These wells can have any of the objectives described above.

[c] Well sampled with passive sampling methodology; field parameter measurements are not representative and therefore are not collected.

[d] Well was removed from the groundwater monitoring network due to safety concerns after Q2 2016. These concerns were mitigated and sampling resumed in Q4 2019; sampling at this well is considered supplemental to the groundwater monitoring program.

[e] Wells initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.

[f] KAFB-106211 will be included for sampling when it has enough saturated water column to deploy passive samplers (former air sparge well).

[g] KAFB-106229 is not formally part of the groundwater monitoring network. However, it gets sampled semiannually for EDB.

[h] Baseline analyses conducted for a total of eight quarters.

BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = 1,2-dibromoethane (ethylene dibromide)
FP = field parameter
GWM = groundwater monitoring
ID = identification
IM = interim measure
KAFB = Kirtland Air Force Base
MCL = maximum contaminant level
Q2 = second quarter
Q4 = fourth quarter
SE = Southeast
SWMU = Solid Waste Management Unit
VA = Veterans Affairs
VOC = volatile organic compound

Table 4-2
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Measurement Date and Time	MRP Elevation (ft AMSL)	Well Depth[a] (ft MRP)	Screened Interval (ft AMSL)	Depth to LNAPL[b] (ft MRP)	Depth to Water[b] (ft MRP)	Screen Submergence Depth[c] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[d] (ft AMSL)
KAFB-106001[e]	4857/4838	1/18/2021 19:38	5344.90	512.90	4859-4834	—	467.93	17.97	—	—	4876.97
KAFB-106002[f]	4857	1/20/2021 14:00	5342.24	506.39	4861-4836	—	465.42	15.82	—	—	4876.82
KAFB-106003	4857	1/20/2021 14:41	5340.28	506.58	4861-4836	—	463.06	16.22	—	—	4877.22
KAFB-106004	4857	1/18/2021 20:16	5345.81	512.89	4859-4834	—	468.73	18.08	—	—	4877.08
KAFB-106005	4857	1/20/2021 15:28	5346.91	509.55	4865-4840	—	470.50	11.41	—	—	4876.41
KAFB-106006	4857	1/18/2021 18:39	5351.48	514.78	4865-4840	—	474.74	11.74	—	—	4876.74
KAFB-106007	4857	1/18/2021 18:21	5349.60	516.25	4861-4836	—	472.77	15.83	—	—	4876.83
KAFB-106008	4857	1/18/2021 17:21	5351.77	513.25	4863-4838	—	475.13	13.64	—	—	4876.64
KAFB-106009	4857	1/20/2021 15:33	5348.55	510.14	4865-4840	—	472.23	11.32	—	—	4876.32
KAFB-106010	4857	1/20/2021 18:20	5343.26	510.24	4860-4835	—	467.47	15.78	—	—	4875.79
KAFB-106011[f]	4857	1/20/2021 16:23	5353.15	519.05	4864-4839	—	477.23	11.92	—	—	4875.92
KAFB-106012R	4857	1/20/2021 15:11	5345.00	502.87	4877-4847	—	468.65	-0.65	—	—	4876.35
KAFB-106013	4857	1/18/2021 18:35	5350.62	519.39	4861-4836	—	474.21	15.41	—	—	4876.41
KAFB-106014	4857	1/20/2021 16:12	5350.22	519.53	4861-4836	—	474.09	15.13	—	—	4876.13
KAFB-106015[e]	4857/4838	1/21/2021 14:40	5342.44	518.56	4855-4830	—	468.15	19.29	—	—	4874.29
KAFB-106016[f]	4857	1/18/2021 15:40	5342.43	508.29	4864-4839	—	465.16	13.27	—	—	4877.27
KAFB-106017[e,f]	4857/4838	1/20/2021 18:38	5342.52	515.61	4857-4832	—	467.31	18.21	—	—	4875.21
KAFB-106018[e,f]	4857/4838	1/18/2021 19:49	5336.31	510.94	4857-4832	—	460.33	18.98	—	—	4875.98
KAFB-106019[e]	4857/4838	1/20/2021 18:46	5354.62	525.90	4859-4834	—	479.24	16.38	—	—	4875.38
KAFB-106020	4857	1/18/2021 18:23	5341.05	510.63	4859-4834	—	464.69	17.36	—	—	4876.36
KAFB-106021	4838	1/19/2021 17:38	5314.33	487.05	4856-4831	—	438.86	--	—	—	4875.47
KAFB-106022[e]	4857/4838	1/20/2021 16:26	5318.06	491.92	4856-4831	—	443.54	18.52	—	—	4874.52
KAFB-106023	4857	1/20/2021 16:52	5328.76	502.87	4856-4831	—	453.82	18.94	—	—	4874.94
KAFB-106024[f]	4857	1/18/2021 19:25	5343.55	511.00	4863-4838	—	466.63	13.92	—	—	4876.92
KAFB-106025[e]	4857/4838	1/21/2021 15:47	5317.28	494.75	4852-4827	—	442.12	23.16	—	—	4875.16
KAFB-106026	4857	1/21/2021 15:39	5322.68	491.28	4857-4837	—	447.95	17.73	—	—	4874.73
KAFB-106027[f]	4857	1/18/2021 14:39	5348.62	509.16	4864-4844	—	471.38	13.24	—	—	4877.24
KAFB-106028	4857	1/20/2021 17:31	5348.89	516.75	4863-4838	—	472.97	12.92	—	—	4875.92
KAFB-106029	4857	1/19/2021 18:06	5310.94	476.83	4860-4840	—	435.56	15.38	—	—	4875.38
KAFB-106030	4838	1/19/2021 17:55	5311.03	490.97	4842-4827	—	435.64	--	—	—	4875.39
KAFB-106031	4814	1/19/2021 17:47	5311.06	515.87	4815-4802	—	435.75	--	—	—	4875.31
KAFB-106032	4857	1/20/2021 19:12	5317.60	480.40	4862-4842	—	441.45	14.15	—	—	4876.15
KAFB-106033	4838	1/20/2021 19:06	5317.76	497.16	4841-4826	—	441.58	--	—	—	4876.18
KAFB-106034	4814	1/20/2021 19:01	5318.63	523.32	4817-4802	—	442.44	--	—	—	4876.19
KAFB-106035	4857	1/20/2021 15:59	5321.58	486.92	4869-4839	—	447.44	5.14	—	—	4874.14
KAFB-106036	4838	1/20/2021 15:48	5321.85	501.36	4840-4825	—	447.83	--	—	—	4874.02
KAFB-106037	4838	1/20/2021 15:55	5322.10	527.09	4815-4800	—	448.53	--	—	—	4873.57
KAFB-106038	4857	1/20/2021 18:54	5351.61	515.19	4870-4840	—	476.32	5.29	—	—	4875.29
KAFB-106039	4838	1/20/2021 18:58	5351.32	530.25	4840-4825	—	476.14	--	—	—	4875.18
KAFB-106040	4814	1/20/2021 19:01	5350.26	552.41	4817-4802	—	475.05	--	—	—	4875.21
KAFB-106041	4857	1/21/2021 16:05	5324.35	473.48	4875-4855	—	449.48	-0.13	—	—	4874.87
KAFB-106042	4857	1/21/2021 16:16	5324.07	488.39	4855-4841	—	449.22	19.85	—	—	4874.85
KAFB-106043	4814	1/21/2021 16:12	5324.30	561.90	4781-4767	—	449.44	--	—	—	4874.86
KAFB-106044[f]	4838	1/18/2021 15:12	5348.79	524.09	4841-4826	—	471.53	--	—	—	4877.26
KAFB-106045	4814	1/18/2021 15:01	5348.52	551.04	4817-4802	—	471.22	--	—	—	4877.30
KAFB-106046[f]	4857	1/18/2021 17:50	5352.84	515.04	4863-4843	—	476.37	13.47	—	—	4876.47
KAFB-106047[f]	4838	1/18/2021 17:56	5352.81	532.01	4841-4826	—	476.47	--	—	—	4876.34
KAFB-106048	4814	1/18/2021 18:00	5352.58	556.26	4817-4802	—	476.20	--	—	—	4876.38

Table 4-2
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Measurement Date and Time	MRP Elevation (ft AMSL)	Well Depth[a] (ft MRP)	Screened Interval (ft AMSL)	Depth to LNAPL[b] (ft MRP)	Depth to Water[b] (ft MRP)	Screen Submergence Depth[c] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[d] (ft AMSL)
KAFB-106049	4857	1/21/2021 16:01	5316.10	479.96	4859-4839	—	440.55	16.55	—	—	4875.55
KAFB-106050	4838	1/21/2021 16:12	5315.51	494.15	4841-4826	—	439.96	--	—	—	4875.55
KAFB-106051	4814	1/21/2021 16:08	5315.78	520.50	4815-4800	—	440.25	--	—	—	4875.53
KAFB-106052	4857	1/21/2021 16:35	5318.86	483.98	4869-4839	—	443.73	6.13	—	—	4875.13
KAFB-106053	4838	1/21/2021 16:31	5318.67	497.95	4840-4825	—	443.67	--	—	—	4875.00
KAFB-106054	4814	1/21/2021 16:23	5318.38	523.25	4814-4799	—	443.27	--	—	—	4875.11
KAFB-106055	4857	1/21/2021 16:29	5325.09	490.29	4859-4839	—	450.31	15.78	—	—	4874.78
KAFB-106057	4838	1/21/2021 16:45	5325.46	505.35	4841-4826	—	450.67	--	—	—	4874.79
KAFB-106058	4814	1/21/2021 16:52	5326.05	530.73	4814-4799	—	451.23	--	—	—	4874.82
KAFB-106059	4857	1/18/2021 16:31	5347.87	511.03	4861-4841	471.09	471.10	15.78	0.01	4876.78	4876.78
KAFB-106060[f]	4838	1/18/2021 16:43	5345.32	523.12	4842-4827	—	468.64	--	—	—	4876.68
KAFB-106061	4814	1/18/2021 16:38	5345.43	593.00	4772-4757	—	468.64	--	—	—	4876.79
KAFB-106062[f]	4814	1/18/2021 17:32	5351.20	598.10	4773-4758	—	474.66	--	—	—	4876.54
KAFB-106063[f,g]	4838	NM	5351.86	528.36	4844-4829	NM	NM	NM	NM	NM	NM
KAFB-106064[f,g]	4857	NM	5351.08	513.18	4863-4843	NM	NM	NM	NM	NM	NM
KAFB-106065[f]	4838	1/20/2021 17:44	5348.76	528.06	4841-4826	—	472.83	--	—	—	4875.93
KAFB-106066[f]	4814	1/20/2021 17:27	5349.09	595.79	4773-4758	—	473.12	--	—	—	4875.97
KAFB-106067[f]	4857	1/20/2021 18:08	5347.50	509.90	4862-4842	—	472.02	13.48	—	—	4875.48
KAFB-106068[f]	4814	1/20/2021 18:00	5347.23	600.03	4767-4752	—	471.88	--	—	—	4875.35
KAFB-106069	4838	1/20/2021 18:05	5347.25	525.45	4841-4826	—	471.64	--	—	—	4875.61
KAFB-106070	4857	1/20/2021 18:34	5318.54	483.75	4859-4839	—	443.60	15.94	—	—	4874.94
KAFB-106071	4814	1/20/2021 18:49	5320.90	567.30	4773-4758	—	445.80	--	—	—	4875.10
KAFB-106072	4838	1/20/2021 18:42	5319.29	494.45	4844-4824	—	444.10	--	—	—	4875.19
KAFB-106073	4838	1/18/2021 18:11	5339.87	519.16	4840-4825	—	463.64	--	—	—	4876.23
KAFB-106074	4814	1/18/2021 18:05	5340.59	588.95	4771-4756	—	464.35	--	—	—	4876.24
KAFB-106075[f]	4857	1/18/2021 18:00	5340.50	505.00	4860-4840	—	464.34	16.16	—	—	4876.16
KAFB-106076	4857	1/18/2021 20:17	5344.92	499.75	4865-4845	468.15	468.16	11.77	0.01	4876.77	4876.77
KAFB-106077	4838	1/18/2021 20:26	5344.72	522.35	4841-4826	—	469.29	--	—	—	4875.43
KAFB-106078[f]	4814	1/18/2021 20:14	5344.60	593.50	4771-4756	—	468.45	--	—	—	4876.15
KAFB-106079	4857	1/20/2021 15:58	5349.67	511.40	4863-4843	—	473.68	12.99	—	—	4875.99
KAFB-106080[f]	4838	1/20/2021 15:53	5348.48	526.28	4843-4828	—	472.25	--	—	—	4876.23
KAFB-106081	4814	1/20/2021 15:48	5349.48	596.23	4772-4757	—	473.41	--	—	—	4876.07
KAFB-106082	4857	1/18/2021 19:40	5335.26	495.89	4863-4843	—	459.62	12.64	—	—	4875.64
KAFB-106083	4838	1/18/2021 19:20	5335.04	514.69	4840-4825	—	459.27	--	—	—	4875.77
KAFB-106084	4814	1/18/2021 19:29	5337.94	587.92	4768-4753	—	462.08	--	—	—	4875.86
KAFB-106085	4857	1/20/2021 18:09	5317.23	480.90	4871-4841	—	441.91	4.32	—	—	4875.32
KAFB-106086	4838	1/20/2021 18:18	5317.65	494.92	4842-4827	—	442.29	--	—	—	4875.36
KAFB-106087	4814	1/20/2021 18:23	5316.87	565.43	4771-4756	—	441.49	--	—	—	4875.38
KAFB-106088	4857	1/20/2021 17:09	5324.27	484.41	4864-4844	—	449.39	10.88	—	—	4874.88
KAFB-106089	4838	1/20/2021 17:16	5323.54	501.82	4842-4827	—	449.10	--	—	—	4874.44
KAFB-106090	4814	1/20/2021 17:25	5322.85	524.65	4768-4753	—	447.94	--	—	—	4874.91
KAFB-106091	4857	1/21/2021 15:20	5314.33	479.51	4860-4840	—	439.69	14.64	—	—	4874.64
KAFB-106092	4838	1/21/2021 15:33	5314.51	493.48	4841-4826	—	439.59	--	—	—	4874.92
KAFB-106093	4814	1/21/2021 15:38	5314.62	563.00	4771-4756	—	439.53	--	—	—	4875.09
KAFB-106094[f]	4857	1/20/2021 17:05	5345.07	509.17	4861-4841	—	469.12	14.95	—	—	4875.95
KAFB-106095	4838	1/20/2021 17:10	5344.66	522.47	4841-4826	—	468.68	--	—	—	4875.98
KAFB-106096[f]	4814	1/20/2021 17:01	5345.31	595.08	4769-4754	—	469.27	--	—	—	4876.04
KAFB-106097	4838	1/18/2021 18:41	5347.74	525.98	4842-4827	—	471.15	--	—	—	4876.59

Table 4-2
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Measurement Date and Time	MRP Elevation (ft AMSL)	Well Depth[a] (ft MRP)	Screened Interval (ft AMSL)	Depth to LNAPL[b] (ft MRP)	Depth to Water[b] (ft MRP)	Screen Submergence Depth[c] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[d] (ft AMSL)
KAFB-106098	4814	1/18/2021 18:45	5347.83	550.78	4817-4802	—	471.26	--	—	—	4876.57
KAFB-106099	4838	1/18/2021 20:22	5342.85	521.10	4842-4827	—	465.69	--	—	—	4877.16
KAFB-106100	4814	1/18/2021 20:29	5342.85	546.55	4817-4802	—	465.70	--	—	—	4877.15
KAFB-106101	4838	1/20/2021 14:35	5340.32	514.83	4842-4826	—	463.30	--	—	—	4877.02
KAFB-106102	4814	1/20/2021 14:47	5340.32	539.80	4816-4803	—	463.42	--	—	—	4876.90
KAFB-106103	4838	1/20/2021 16:46	5328.44	505.25	4843-4828	—	454.07	--	—	—	4874.37
KAFB-106104	4814	1/20/2021 16:35	5328.08	528.30	4818-4803	—	453.50	--	—	—	4874.58
KAFB-106105	4838	1/21/2021 16:54	5321.96	503.90	4838-4823	—	447.15	--	—	—	4874.81
KAFB-106106	4857	1/21/2021 17:01	5321.80	483.04	4868-4838	—	447.03	6.77	—	—	4874.77
KAFB-106107	4814	1/21/2021 16:47	5322.12	529.15	4812-4797	—	447.24	--	—	—	4874.88
KAFB-106148-484[h]	4857	1/18/2021 19:31	5344.24	479.68	4990-4860	—	467.52	-113.52	—	—	4876.72
KAFB-106149-484[h]	4857	1/18/2021 19:45	5345.94	479.90	4992-4862	—	469.49	-115.55	—	—	4876.45
KAFB-106150-484[h]	4857	1/18/2021 20:40	5344.10	480.08	4989-4860	467.68	468.01	-112.66	0.33	4876.42	4876.34
KAFB-106151-484[h]	4857	1/18/2021 16:14	5345.49	480.10	4990-4861	—	469.44	-113.95	—	—	4876.05
KAFB-106152-484[h]	4857	1/18/2021 17:01	5347.68	482.60	4992-4863	—	471.22	-115.54	—	—	4876.46
KAFB-106153-484[h]	4857	1/18/2021 20:03	5348.99	480.49	4994-4865	—	472.65	-117.66	—	—	4876.34
KAFB-106154-484[h]	4857	1/18/2021 19:58	5347.34	481.15	4992-4863	470.73	470.95	-115.44	0.22	4876.61	4876.56
KAFB-106155-484[h]	4857	1/18/2021 18:30	5347.13	481.16	4992-4863	—	471.11	-115.98	—	—	4876.02
KAFB-106156-484[h]	4857	1/18/2021 15:51	5341.19	481.82	4996-4857	—	464.36	-119.17	—	—	4876.83
KAFB-106201	4857	1/20/2021 14:43	5357.00	524.11	4867-4837	—	484.05	5.95	—	—	4872.95
KAFB-106202	4838	1/20/2021 14:48	5357.80	538.94	4838-4823	—	484.77	--	—	—	4873.03
KAFB-106203	4814	1/20/2021 14:53	5357.52	642.02	4734-4719	—	484.87	--	—	—	4872.65
KAFB-106204	4857	1/18/2021 17:41	5332.86	497.48	4870-4840	—	458.27	4.59	—	—	4874.59
KAFB-106205	4838	1/18/2021 17:32	5333.29	512.46	4841-4826	—	458.71	--	—	—	4874.58
KAFB-106206	4814	1/18/2021 17:25	5333.46	613.58	4740-4725	—	458.86	--	—	—	4874.60
KAFB-106207	4857	1/18/2021 15:51	5344.20	507.40	4871-4841	—	470.29	2.90	—	—	4873.91
KAFB-106208	4838	1/18/2021 16:01	5343.85	522.48	4841-4826	—	470.01	--	—	—	4873.84
KAFB-106209	4814	1/18/2021 16:08	5343.38	623.85	4740-4726	—	469.40	--	—	—	4873.98
KAFB-106211[i]	4857	1/20/2021 18:35	5342.51	466.72	4903-4875.79	Dry	Dry	Dry	Dry	Dry	Dry
KAFB-106212	4814	1/20/2021 16:09	5321.80	562.97	4779-4764	—	448.15	--	—	—	4873.65
KAFB-106213	4857	1/20/2021 15:36	5325.19	482.79	4877-4847	—	450.95	-2.76	—	—	4874.24
KAFB-106214	4838	1/20/2021 15:29	5325.45	497.80	4847-4833	—	451.09	--	—	—	4874.36
KAFB-106215	4814	1/20/2021 15:20	5325.77	566.87	4779-4764	—	451.33	--	—	—	4874.44
KAFB-106216	4857	1/21/2021 15:06	5333.91	489.80	4878-4848	—	459.44	-3.53	—	—	4874.47
KAFB-106217	4838	1/21/2021 15:01	5333.85	505.47	4849-4834	—	459.34	--	—	—	4874.51
KAFB-106218	4814	1/21/2021 14:55	5333.64	572.31	4782-4767	—	459.48	--	—	—	4874.16
KAFB-106219	4857	1/20/2021 15:06	5340.41	498.78	4878-4848	—	466.42	-4.01	—	—	4873.99
KAFB-106220	4838	1/18/2021 17:11	5340.34	513.50	4847-4832	—	466.01	--	—	—	4874.33
KAFB-106221	4814	1/18/2021 17:06	5340.10	581.25	4779-4764	—	465.78	--	—	—	4874.32
KAFB-106222	4857	1/21/2021 14:48	5333.24	493.33	4875-4845	—	459.01	-0.77	—	—	4874.23
KAFB-106223	4838	1/21/2021 14:55	5333.96	506.71	4846-4831	—	459.64	--	—	—	4874.32
KAFB-106224	4814	1/21/2021 15:05	5335.08	575.88	4780-4765	—	460.73	--	—	—	4874.35
KAFB-106225	4857	1/21/2021 15:12	5326.36	482.88	4876-4846	—	452.26	-1.90	—	—	4874.10
KAFB-106226	4838	1/21/2021 15:23	5327.31	500.10	4847-4832	—	452.82	--	—	—	4874.49
KAFB-106227	4814	1/21/2021 15:29	5328.09	568.36	4780-4765	—	453.52	--	—	—	4874.57
KAFB-106229[e,h]	4857/4838	1/21/2021 15:26	5314.31	536.27	4883-4783	—	439.41	-8.10	—	—	4874.90
KAFB-106230	4814	1/21/2021 15:46	5324.51	520.32	4824-4809	—	450.13	--	—	—	4874.38
KAFB-106231	4857	1/19/2021 18:33	5327.56	479.89	4888-4853	—	453.19	-13.63	—	—	4874.37

Table 4-2
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Measurement Date and Time	MRP Elevation (ft AMSL)	Well Depth[a] (ft MRP)	Screened Interval (ft AMSL)	Depth to LNAPL[b] (ft MRP)	Depth to Water[b] (ft MRP)	Screen Submergence Depth[c] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[d] (ft AMSL)
KAFB-106232	4814	1/19/2021 18:23	5327.20	523.10	4824-4809	—	452.68	--	—	—	4874.52
KAFB-106235-438	4857	1/18/2021 16:42	5315.67	465.50	4878-4853	—	440.88	-3.21	—	—	4874.79
KAFB-106235-472	4838	1/18/2021 16:48	5315.67	494.14	4844-4824	—	440.86	--	—	—	4874.81
KAFB-106235-501	4814	1/18/2021 16:52	5315.67	522.48	4815-4795	—	440.91	--	—	—	4874.76
KAFB-106236-436	4857	1/18/2021 16:21	5316.02	463.30	4880-4855	—	441.00	-4.98	—	—	4875.02
KAFB-106236-470	4838	1/18/2021 16:26	5316.02	492.17	4846-4826	—	440.94	--	—	—	4875.08
KAFB-106236-499	4814	1/18/2021 16:29	5316.02	519.94	4817-4797	—	440.99	--	—	—	4875.03
KAFB-106240-449	4857	1/18/2021 20:01	5347.57	491.05	4899-4859	—	471.12	-22.55	—	—	4876.45
KAFB-106241-428	4857	1/21/2021 16:36	5324.06	470.10	4896-4856	—	449.89	-21.83	—	—	4874.17
KAFB-106242-418	4857	1/19/2021 17:29	5316.15	459.94	4898-4858	—	440.72	-22.57	—	—	4875.43
KAFB-106243-425	4857	1/20/2021 17:31	5320.57	567.30	4896-4856	—	445.66	-21.09	—	—	4874.91
KAFB-106244-445	4857	1/18/2021 20:30	5343.51	487.12	4898-4858	—	466.59	-21.08	—	—	4876.92
KAFB-106245-460	4857	1/20/2021 16:37	5360.90	505.51	4897-4857	—	485.52	-21.62	—	—	4875.38
KAFB-106247-450	4857	1/18/2021 18:11	5351.60	495.12	4901-4861	—	474.90	-24.30	—	—	4876.70
KAFB-106S1-447	4857	1/18/2021 20:31	5345.22	489.53	4898-4858	—	468.32	-21.10	—	—	4876.90
KAFB-106S2-451	4857	1/18/2021 17:15	5352.40	496.45	4898-4858	—	475.84	-21.44	—	—	4876.56
KAFB-106S3-449	4857	1/20/2021 16:07	5351.01	493.62	4899-4859	—	475.38	-23.37	—	—	4875.63
KAFB-106S4-446	4857	1/20/2021 15:22	5346.57	491.09	4898-4858	—	470.24	-21.67	—	—	4876.33
KAFB-106S5-446	4857	1/20/2021 18:24	5343.58	488.18	4898-4858	—	467.65	-22.07	—	—	4875.93
KAFB-106S7-451	4857	1/20/2021 17:35	5348.88	492.02	4898-4858	—	472.96	-22.08	—	—	4875.92
KAFB-106S8-451	4857	1/18/2021 18:43	5351.45	491.42	4900-4860	—	474.74	-23.29	—	—	4876.71
KAFB-106S9-447	4857	1/18/2021 16:51	5345.82	489.19	4899-4859	—	469.48	-22.66	—	—	4876.34
KAFB-106S10-443[j]	4857	1/15/2021 08:30	5348.73	472.14	4905-4865	—	471.14	-27.41	—	—	4877.59
KAFB-3411	4857	1/18/2021 16:03	5343.49	504.68	4863-4838	—	466.44	14.05	—	—	4877.05

Table 4-2
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2021

[a] Well depths were measured in Q4 2020 in wells without a dedicated pump. For wells with a dedicated pump, the total depth is based on the information provided in the well completion diagram.

[b] See appendix table C-2-2 for corrections to water level and LNAPL depths based on interface probe calibration.

[c] Screen submergence depth is calculated for wells which intersected the water table when they were installed; those are the wells located in REI 4857 and 4857/4838. It is calculated as the difference between the groundwater elevation corrected for LNAPL thickness and the top of screen elevation. Negative values reflect the length of screen remaining above the water table.

[d] Groundwater elevation corrected for LNAPL thickness was calculated by the following formula: MRP Elevation - Depth to LNAPL/water interface + (LNAPL Thickness * Specific Gravity of Weathered JP4/JP8 Fuel) where the specific gravity of JP4/JP8 fuel is 0.7592. The specific gravity is based on the December 13, 2018 site-specific fuel testing report from PTS Laboratories using LNAPL collected from wells KAFB-106014, KAFB-106059, and KAFB-106079.

[e] Well used in analyses for both REI 4857 and 4838.

[f] This well contains a dedicated pump; therefore, a sounder was not deployed to avoid entanglement and the total depth is based on the information provided in the well completion diagram.

[g] Well was not gauged in January due to presence of monitoring equipment.

[h] Well not permanently designated in REI listed.

[i] Well was gauged and found to be dry in Q1 2021.

[j] Well gauged prior to sampling. Since this was not during the synoptic gauging period, data is included for informational purposes only, and was not used in creation of the potentiometric surface map.

-- = Well was designed with the screened interval fully submerged to capture conditions at depths below the water table

— = LNAPL not detected

AMSL = above mean sea level

ft = foot/feet

ID = identification

JP = jet propellant

KAFB = Kirtland Air Force Base

LNAPL = light non-aqueous phase liquid

MRP = measurement reference point

NM = not measured

Q1 = first quarter

Q4 = fourth quarter

REI = reference elevation interval

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Table 4-3
Status of Quarterly Baseline Sampling and Summary of Analytical Results, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Dates Newly Added Wells Sampled	Number of Quarters Sampled	Remaining Quarters to Complete Baseline	Summary of Analytical Results for Samples Collected During Q1 2021
KAFB-106S10-443	4857	1/15/2021	1	7	EDB and BTEX exceeded their respective project screening levels. Ethylbenzene was detected below the project screening level. Dissolved manganese exceeded the project screening level, and dissolved iron was detected below the project screening level.
		TBD	2		
		TBD	3		
		TBD	4		
		TBD	5		
		TBD	6		
		TBD	7		
		TBD	8		

AMSL = above mean sea level
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = 1,2-dibromoethane (ethylene dibromide)
ft = foot/feet
ID = identification
KAFB = Kirtland Air Force Base
Q1 = first quarter
TBD = to be determined

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Table 4-4
Historical Light Non-Aqueous Phase Liquid Thickness

Well ID	KAFB-106005	KAFB-106006	KAFB-106008	KAFB-106009	KAFB-106010	KAFB-106014	KAFB-106028	KAFB-106059	KAFB-106064	KAFB-106076	KAFB-106079	KAFB-106150-484	KAFB-106154-484
Sampling Quarter	LNAPL Thickness (feet)												
Q1 2007	1.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q1 2008	NA	0.58	0.99	1.39	0.61	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2008	NA	NA	1.03	1.48	0.73	NA	NA	NA	NA	NA	NA	NA	NA
Q3 2008	NA	0.28	1.87	1.78	0.89	NA	NA	NA	NA	NA	NA	NA	NA
Q4 2008	NA	0.82	1.65	1.92	0.89	1.55	NA	NA	NA	NA	NA	NA	NA
Q1 2009	NA	0.73	1.26	1.42	NA	0.61	NA	NA	NA	NA	NA	NA	NA
Q3 2009	3.01	1.47	2.71	1.77	0.89	1.07	NA	NA	NA	NA	NA	NA	NA
Q1 2010	0.25	0.2	2.38	1.09	0.05	0.62	NA	NA	NA	NA	NA	NA	NA
Q2 2010	3.33	2.45	3.8	0.79	1.18	0.23	NA	NA	NA	NA	NA	NA	NA
Q3 2010	4.03	0.88	2.83	1.01	0.06	0.21	0.15	NA	NA	NA	NA	NA	NA
Q4 2010	1.54	1.04	1.24	1.1	0.15	0.21	0.22	NA	NA	NA	NA	NA	NA
Q1 2011	0.33	0.55	0.83	0.42	--	--	0.09	NA	NA	NA	NA	NA	NA
Q2 2011	0.06	0.33	0.02	--	--	--	--	0.23	--	0.26	--	NA	NA
Q3 2011	0.86	0.85	0.17	2.42	--	--	0.2	1.25	0.11	1.07	--	NA	NA
Q4 2011	0.26	0.88	0.44	0.33	--	--	0.38	0.94	--	1.38	--	NA	NA
Q1 2012	--	--	--	--	--	--	--	0.72	--	0.46	--	NA	NA
Q2 2012	--	--	--	--	--	--	--	--	--	0.64	--	NA	NA
Q3 2012	--	--	--	--	--	--	--	--	--	0.55	--	NA	NA
Q4 2012	--	--	--	--	--	--	--	0.14	--	0.8	--	NA	NA
Q1 2013	--	--	--	--	--	--	--	--	--	0.04	--	NA	NA
Q2 2013	0.01	--	--	--	--	--	--	--	--	--	--	NA	NA
Q3 2013	--	--	--	--	--	--	--	0.38	--	--	--	NA	NA
Q4 2013	0.03	--	--	--	--	--	--	--	--	0.25	--	NA	NA
Q1 2014	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q2 2014	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q3 2014	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q4 2014	--	0.06	--	0.05	--	--	--	--	--	--	--	NA	NA
Q1 2015	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q2 2015	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q3 2015	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q4 2015	--	--	--	--	--	--	--	--	--	0.02	--	NA	NA
Q1 2016	0.1	NA	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q2 2016	0.01	--	0.05	--	--	--	--	--	--	0.01	--	NA	NA
Q3 2016	0.01	--	0.04	--	--	--	--	--	--	0.01	--	NA	NA
Q4 2016	--	--	0.03	--	--	--	--	--	--	--	--	NA	NA
Q1 2017	--	--	0.01	--	--	--	--	--	--	--	--	NA	NA
Q2 2017	--	--	--	--	--	--	--	--	--	--	--	NA	NA
Q3 2017	--	--	--	--	--	--	--	--	NA	--	--	NA	NA
Q4 2017	--	--	--	--	--	--	--	--	NA	--	--	0.03	0.03
Q1 2018	--	--	--	--	--	--	--	--	NA	0.01	0.02	0.03	0.02
Q2 2018	--	--	--	--	--	--	--	--	NA	--	0.03	0.06	0.03
Q3 2018	--	--	--	--	--	--	--	--	NA	--	0.03	0.05	0.02
Q4 2018	--	--	--	--	--	--	--	--	NA	0.01	--	0.11	0.04
Q1 2019	--	--	--	--	--	0.11	--	0.34	NA	0.02	0.18	--	0.11
Q2 2019	--	--	--	--	--	0.10	--	0.21	NA	0.01	0.14	--	--
Q3 2019	--	--	--	--	--	0.06	--	0.21	NA	0.01	0.15	--	0.21
Q4 2019	--	--	--	--	--	--	--	--	NA	0.01	--	0.04	0.16

Table 4-4
Historical Light Non-Aqueous Phase Liquid Thickness

Well ID	KAFB-106005	KAFB-106006	KAFB-106008	KAFB-106009	KAFB-106010	KAFB-106014	KAFB-106028	KAFB-106059	KAFB-106064	KAFB-106076	KAFB-106079	KAFB-106150-484	KAFB-106154-484
Sampling Quarter	LNAPL Thickness (feet)												
Q1 2020	--	--	--	--	--	--	--	0.16	--	0.04	--	0.11	--
Q2 2020	--	--	--	--	--	--	--	0.15	--	0.01	--	0.38	--
Q3 2020	--	--	--	--	--	--	--	0.01	--	--	--	0.27	0.02
Q4 2020	0.01	--	--	--	--	--	--	0.01	--	--	--	0.10	0.04
Q1 2021	--	--	--	--	--	--	--	0.01	--	0.01	--	0.33	0.22

-- = no LNAPL detected

All wells are in reference elevation interval 4857.

ID = identification

LNAPL = light non-aqueous phase liquid

NA = not applicable (this well was not gauged in the sampling quarter)

Q1 = first quarter

Q2 = second quarter

Q3 = third quarter

Q4 = fourth quarter

Table 4-5
Groundwater Monitoring Wells Sampled, Q1 2021

Location ID	Reference Elevation Interval (ft AMSL)	Well Installation Date[a]	Date Sampled	Screen Interval[b] (ft bgs)	Screen Interval[b] (ft AMSL)	Sampling System	Screen Submerged[c] (Yes/No)?	Estimated Sample Depth[d,e,f] (ft bgs)	Analytical Suite[g]
KAFB-106003	4857	1/25/2003	1/14/2021	476-501	4861-4836	Portable pump	Yes	478	BTEX, EDB, FP
KAFB-106004	4857	1/4/2006	1/13/2021	484-509	4859-4834	Portable pump	Yes	486	BTEX, EDB, FP
KAFB-106005	4857	1/22/2007	1/12/2021	479-504	4865-4840	Portable pump	Yes	481	BTEX, EDB, metals, anions, alkalinity,FP
KAFB-106009	4857	11/28/2007	1/11/2021	480-505	4865-4840	Portable pump	Yes	482	BTEX, EDB, metals, anions, alkalinity, FP
KAFB-106012R	4857	4/22/2014	1/11/2021	466-495	4877-4847	Portable pump	No	493	BTEX, EDB, metals, anions, alkalinity, FP
KAFB-106013	4857	9/19/2008	1/12/2021	487-512	4861-4836	Portable pump	Yes	489	BTEX, EDB, FP
KAFB-106029	4857	6/4/2011	1/4/2021	451-471	4860-4840	Passive sampler	Yes	452	EDB
KAFB-106030	4838	5/25/2011	1/4/2021	470-485	4842-4827	Passive sampler	Yes	470	EDB
KAFB-106031	4814	5/25/2011	1/4/2021	496-510	4815-4802	Passive sampler	Yes	497	EDB
KAFB-106032	4857	6/24/2011	1/4/2021	456-476	4862-4842	Passive sampler	Yes	457	EDB
KAFB-106033	4838	6/18/2011	1/4/2021	477-492	4841-4826	Passive sampler	Yes	478	EDB
KAFB-106034	4814	6/24/2011	1/4/2021	502-517	4817-4802	Passive sampler	Yes	503	EDB
KAFB-106041	4857	6/6/2011	1/4/2021	449-469	4875-4855	Passive sampler	No	450	EDB, metals, anions, alkalinity
KAFB-106049	4857	5/13/2011	1/4/2021	457-477	4859-4839	Passive sampler	Yes	458	EDB
KAFB-106050	4838	5/2/2011	1/4/2021	474-489	4841-4826	Passive sampler	Yes	475	EDB
KAFB-106051	4814	4/26/2011	1/4/2021	501-516	4815-4800	Passive sampler	Yes	502	EDB
KAFB-106063[h]	4838	4/8/2011	1/11/2021	505-520	4844-4829	Bladder pump	Yes	511	EDB, VOCs, FP
KAFB-106064[h]	4857	3/24/2011	1/11/2021	485-505	4863-4843	Bladder pump	Yes	493	EDB, VOCs, FP
KAFB-106097	4838	4/27/2011	1/12/2021	506-521	4842-4827	Portable pump	Yes	508	BTEX, EDB, FP
KAFB-106098	4814	4/17/2011	1/12/2021	531-546	4817-4802	Portable pump	Yes	533	BTEX, EDB, FP
KAFB-106099	4838	5/12/2011	1/13/2021	501-516	4842-4827	Portable pump	Yes	503	BTEX, EDB, FP
KAFB-106100	4814	5/3/2011	1/13/2021	526-541	4817-4802	Portable pump	Yes	528	BTEX, EDB, FP
KAFB-106101	4838	2/21/2011	1/13/2021	496-511	4842-4826	Portable pump	Yes	498	BTEX, EDB, FP
KAFB-106102	4814	3/3/2011	1/14/2021	521-535	4816-4803	Portable pump	Yes	523	BTEX, EDB, FP
KAFB-106149-484[i]	4857	9/16/2011	1/4/2021	354-484	4992-4862	Passive sampler	No	472	EDB, metals, anions, alkalinity
KAFB-106151-484[i]	4857	9/30/2011	1/4/2021	355-484	4990-4861	Passive sampler	No	470	EDB, metals, anions, alkalinity
KAFB-106152-484[i]	4857	10/7/2011	1/4/2021	355-484	4992-4863	Passive sampler	No	472	EDB, metals, anions, alkalinity
KAFB-106153-484[i]	4857	10/27/2011	1/4/2021	355-484	4994-4865	Passive sampler	No	475	EDB, metals, anions, alkalinity
KAFB-106201	4857	9/24/2012	1/4/2021	487-517	4867-4837	Passive sampler	Yes	490	EDB
KAFB-106202	4838	9/23/2012	1/4/2021	517-532	4838-4823	Passive sampler	Yes	521	EDB
KAFB-106203	4814	9/9/2012	1/4/2021	620-635	4734-4719	Passive sampler	Yes	624	EDB
KAFB-106204	4857	8/22/2012	1/4/2021	463-493	4870-4840	Passive sampler	Yes	463	EDB
KAFB-106205	4838	8/15/2012	1/4/2021	493-508	4841-4826	Passive sampler	Yes	493	EDB
KAFB-106206	4814	7/16/2012	1/4/2021	594-608	4740-4725	Passive sampler	Yes	594	EDB
KAFB-106207	4857	8/22/2012	1/4/2021	473-503	4871-4841	Passive sampler	Yes	474	EDB
KAFB-106208	4838	8/16/2012	1/4/2021	503-518	4841-4826	Passive sampler	Yes	504	EDB
KAFB-106209	4814	8/7/2012	1/4/2021	603-617	4740-4726	Passive sampler	Yes	604	EDB
KAFB-106216	4857	2/17/2015	1/4/2021	456-486	4878-4848	Passive sampler	No	461	EDB
KAFB-106217	4838	2/17/2015	1/4/2021	485-500	4849-4834	Passive sampler	Yes	486	EDB
KAFB-106218	4814	5/26/2015	1/4/2021	552-567	4782-4767	Passive sampler	Yes	553	EDB
KAFB-106222	4857	1/15/2015	1/4/2021	458-488	4875-4845	Passive sampler	No	461	EDB
KAFB-106223	4838	2/17/2015	1/4/2021	488-503	4846-4831	Passive sampler	Yes	489	EDB
KAFB-106224	4814	5/22/2015	1/4/2021	555-570	4780-4765	Passive sampler	Yes	556	EDB
KAFB-106230	4814	9/1/2015	1/4/2021	501-516	4824-4809	Passive sampler	Yes	502	EDB, metals, anions, alkalinity
KAFB-106231	4857	9/15/2015	1/4/2021	440-475	4888-4853	Passive sampler	No	454	EDB
KAFB-106232	4814	9/15/2015	1/4/2021	503-518	4824-4809	Passive sampler	Yes	504	EDB
KAFB-106235-438	4857	10/31/2016	1/4/2021	438-463	4878-4853	Passive sampler	No	441	EDB
KAFB-106235-472	4838	10/31/2016	1/4/2021	472-492	4844-4824	Passive sampler	Yes	473	EDB
KAFB-106235-501	4814	10/31/2016	1/4/2021	501-521	4815-4795	Passive sampler	Yes	502	EDB
KAFB-106236-436	4857	11/23/2016	1/4/2021	436-461	4880-4855	Passive sampler	No	442	EDB
KAFB-106236-470	4838	11/23/2016	1/4/2021	470-490	4846-4826	Passive sampler	Yes	471	EDB

Table 4-5
Groundwater Monitoring Wells Sampled, Q1 2021

Location ID	Reference Elevation Interval (ft AMSL)	Well Installation Date[a]	Date Sampled	Screen Interval[b] (ft bgs)	Screen Interval[b] (ft AMSL)	Sampling System	Screen Submerged[c] (Yes/No)?	Estimated Sample Depth[d,e,f] (ft bgs)	Analytical Suite[g]
KAFB-106236-499	4814	11/23/2016	1/4/2021	499-519	4817-4797	Passive sampler	Yes	500	EDB
KAFB-106240-449	4857	6/14/2018	1/4/2021	449-489	4899-4859	Passive sampler	No	473	BTEX, EDB, metals, anions, alkalinity
KAFB-106241-428	4857	8/16/2018	1/4/2021	428-468	4896-4856	Passive sampler	No	452	EDB, metals, anions, alkalinity
KAFB-106242-418	4857	8/23/2018	1/4/2021	418-458	4898-4858	Passive sampler	No	442	EDB, metals, anions, alkalinity
KAFB-106243-425	4857	7/27/2018	1/4/2021	425-465	4896-4856	Passive sampler	No	447	EDB, metals, anions, alkalinity
KAFB-106244-445	4857	7/12/2018	1/4/2021	445-485	4898-4858	Passive sampler	No	469	BTEX, EDB, metals, anions, alkalinity
KAFB-106245-460	4857	9/7/2018	1/4/2021	461-501	4897-4857	Passive sampler	No	485	BTEX, EDB, metals, anions, alkalinity
KAFB-106247-450	4857	3/1/2019	1/4/2021	450-490	4898-4858	Passive sampler	No	477	BTEX, EDB, metals, anions, alkalinity
KAFB-106S1-447	4857	2/18/2019	1/4/2021	447-487	4898-4858	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity
KAFB-106S2-451	4857	11/21/2018	1/4/2021	451-491	4898-4858	Passive sampler	No	478	BTEX, EDB, metals, anions, alkalinity
KAFB-106S3-449	4857	11/29/2018	1/8/2021	449-489	4899-4859	Passive sampler	No	476	BTEX, EDB, metals, anions, alkalinity
KAFB-106S4-446	4857	11/16/2018	1/4/2021	446-486	4897-4857	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity
KAFB-106S5-446	4857	11/5/2018	1/8/2021	446-486	4898-4858	Passive sampler	No	468	BTEX, EDB, metals, anions, alkalinity
KAFB-106S7-451	4857	2/4/2019	1/8/2021	451-491	4898-4858	Passive sampler	No	475	BTEX, EDB, metals, anions, alkalinity
KAFB-106S8-451	4857	3/1/2019	1/4/2021	451-491	4897-4857	Passive sampler	No	476	BTEX, EDB, metals, anions, alkalinity
KAFB-106S9-447	4857	11/8/2019	1/8/2021	447-487	4899-4859	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity
KAFB-106S10-443[j]	4857	12/19/2020	1/15/2021	446-486	4905-4865	Portable pump	No	484	Full suite VOCs, EDB, metals, anions, alkalinity

[a] Well installation date is the date provided in ERPIMS, except where the date in ERPIMS is the start of drilling, in which case the well installation date is the date provided in the well completion diagram submitted to the NMOSE.

[b] Screen interval is rounded to the nearest foot.

[c] Well screens in REI 4857 wells intersected the water table when they were installed and current screen submergence is the result of the rise of the water table. Well screens in REI 4838 and 4814 wells were designed with the screened interval fully submerged

[d] Portable equipment sampling depths are estimated to the nearest foot as 2 ft below top of screen if submerged or 2 ft above bottom of screen if not submerged.

[e] Dedicated pump sampling depth is estimated as half-way between top and bottom of screen.

[f] Passive sampling depth is estimated to the nearest foot as the depth to the top of the highest sampler.

[g] The analytical methods for EDB and VOCs (including BTEX) are 8011 and 8260C, respectively. Metals analyses consisted of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium by analytical Method 6020A/6010C and select and dissolved metals (iron and manganese) (6010C). Anions analysis consisted of bromide by Method 300.0A, chloride by Method 300.0A, nitrate/nitrite nitrogen by Method 353.2, and sulfate by Method 300.0A. Field parameters include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.

[h] Well sampled as part of EDB in situ bioremediation long term monitoring and is not part of the regular Q1 GWM sampling schedule.

[i] Wells initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.

[j] New wells will be sampled for eight quarters for baseline analyses.

-- = pump intake depth is not applicable for passive samples
AMSL = above mean sea level
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and total xylene
EDB = 1,2-dibromoethane (ethylene dibromide)
ERPIMS = Environmental Resources Program Information Management System
FP = field parameters
ft = foot/feet
GWM = groundwater monitoring
ID = identification
KAFB = Kirtland Air Force Base
NMOSE = New Mexico Office of the State Engineer
REI = reference elevation interval
VOC = volatile organic compound

Table 4-6
Groundwater Analytical Results for Wells within the Baseline Period, Q1 2021

			Well Location ID:				KAFB-106S10-443		
			Field Sample ID:				GWS10-443-211		
			Sample Date:				1/15/2021		
			Sample Type:				REG		
			Sample Depth (ft bgs):				483.8		
			Reference Elevation Interval (ft AMSL):				4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	**200**	--	39
VOCs	Method SW8260C (µg/L)	1,1,1,2-Tetrachloroethane	NS	NS	5.7	5.7	ND	U	2.5
		1,1,1-Trichloroethane	200	200	8,000	200	ND	U	2.5
		1,1,2,2-Tetrachloroethane	10	NS	0.76	10	ND	U	2.5
		1,1,2-Trichloroethane	5	5	2.8	5	ND	U	2.5
		1,1-Dichloroethane	25	NS	28	25	ND	U	2.5
		1,1-Dichloroethene	7	7	280	7	ND	U	2.5
		1,1-Dichloropropene	NS	NS	NS	NS	ND	U	2.5
		1,2,3-Trichlorobenzene	NS	NS	7	7	ND	U	5
		1,2,3-Trichloropropane	NS	NS	0.0075	0.0075	ND	U	2.5
		1,2,4-Trichlorobenzene	70	70	12	70	ND	U	5
		1,2,4-Trimethylbenzene	NS	NS	56	56	**190**	--	10
		1,2-Dibromo-3-chloropropane	NS	0.2	0.0033	0.2	ND	U	5
		1,2-Dibromoethane	0.05	0.05	0.075	0.05	**170**	--	2.5
		1,2-Dichlorobenzene	600	600	300	600	ND	U	2.5
		1,2-Dichloroethane	5	5	1.7	5	ND	U	2.5
		1,2-Dichloropropane	5	5	8.5	5	ND	U	2.5
		1,3,5-Trimethylbenzene	NS	NS	60	60	56	--	5
		1,3-Dichlorobenzene	NS	NS	NS	NS	ND	U	2.5
		1,3-Dichloropropane	NS	NS	370	370	ND	U	2.5
		1,4-Dichlorobenzene	75	75	4.8	75	ND	U	2.5
		2,2-Dichloropropane	NS	NS	NS	NS	ND	U	2.5
		2-Butanone	NS	NS	5,600	5,600	50	--	5
		2-Chlorotoluene	NS	NS	240	240	ND	U	2.5
		2-Hexanone	NS	NS	38	38	26	J	5
		4-Chlorotoluene	NS	NS	250	250	ND	U	2.5
		4-Isopropyltoluene	NS	NS	NS	NS	3.5	J	2.5
		4-Methyl-2-pentanone	NS	NS	6,300	6,300	13	J	5
		Acetone	NS	NS	14,000	14,000	260	--	10
		Acrolein	NS	NS	0.042	0.042	ND	U	25
		Acrylonitrile	NS	NS	0.52	0.52	ND	U	5
		Benzene	5	5	4.6	5	**11,000**	--	25
		Bromobenzene	NS	NS	62	62	ND	U	2.5
		Bromochloromethane	NS	NS	83	83	ND	U	2.5
		Bromodichloromethane	NS	80	1.3	80	ND	U	2.5
		Bromoform	NS	80	33	80	ND	U	10
		Bromomethane	NS	NS	7.5	7.5	ND	U	2.5
		Carbon disulfide	NS	NS	810	810	ND	U	2.5
		Carbon tetrachloride	5	5	4.6	5	ND	U	2.5
		Chlorobenzene	NS	100	78	100	ND	U	2.5
		Chloroethane	NS	NS	21,000	21,000	ND	U	2.5
		Chloroform	100	80	2.2	80	ND	U	2.5
		Chloromethane	NS	NS	190	190	ND	U	2.5
		cis-1,2-Dichloroethene	70	70	36	70	ND	U	2.5
		cis-1,3-dichloropropene	NS	NS	4.7	4.7	ND	U	2.5
		Dibromochloromethane	NS	80	8.7	80	ND	U	2.5
		Dibromomethane	NS	NS	8.3	8.3	ND	U	2.5
		Dichlorodifluoromethane	NS	NS	200	200	ND	UJ	2.5
		Ethylbenzene	700	700	15	700	670	--	4
		Hexachloro-1,3-butadiene	NS	NS	1.4	1.4	ND	U	20
		Isopropylbenzene	NS	NS	450	450	37	--	2.5
		m- & p-Xylenes	NS	NS	NS	NS	2,100	--	10
		Methyl tert-butyl ether	100	NS	140	100	ND	U	2.5
		Methylene chloride	5	5	110	5	ND	U	2.5
		Naphthalene	30	NS	1.2	30	**110**	--	10
		n-Butylbenzene	NS	NS	1,000	1,000	2.6	J	2.5
		n-Propylbenzene	NS	NS	660	660	29	--	2.5
		o-Xylene	NS	NS	190	190	**910**	--	4
		sec-Butylbenzene	NS	NS	2,000	2,000	5.1	J	2.5
		Styrene	100	100	1,200	100	ND	U	2.5
		tert-Butylbenzene	NS	NS	690	690	ND	U	5
		Tetrachloroethene	5	5	110	5	ND	U	2.5
		Toluene	1,000	1,000	1,100	1,000	**17,000**	--	250
		trans-1,2-Dichloroethene	100	100	68	100	ND	U	2.5
		trans-1,3-dichloropropene	NS	NS	4.7	4.7	ND	U	2.5
		Trichloroethene	5	5	4.9	5	ND	U	2.5
		Trichlorofluoromethane	NS	NS	5,200	5,200	ND	U	2.5
		Vinyl acetate	NS	NS	410	410	ND	U	10
		Vinyl chloride	2	2	0.19	2	ND	U	2.5
		Xylenes, total	620	10,000	190	620	**3,000**	--	14

Table 4-6
Groundwater Analytical Results for Wells within the Baseline Period, Q1 2021

						Well Location ID:	KAFB-106S10-443		
						Field Sample ID:	GWS10-443-211		
						Sample Date:	1/15/2021		
						Sample Type:	REG		
						Sample Depth (ft bgs):	483.8		
						Reference Elevation Interval (ft AMSL):	4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**
TPH	Method SW8015M (µg/L)	TPH-DRO (C10-C28)	NS	NS	1,300	1,300	**26,000**	--	530
		TPH-GRO (C6-C10)	NS	NS	550	550	**62,000**	--	1,000
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	48	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	ND	U	0.1
		Magnesium	NS	NS	NS	NS	7.6	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	**0.77**	--	0.0052
		Potassium	NS	NS	NS	NS	2.8	--	0.45
		Sodium	NS	NS	NS	NS	26	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0015	J	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.0005
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2
		Chloride	250	NS	NS	250	16	--	1.5
		Sulfate	600	250	NS	250	9.8	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[e]	10[e]	NS	10[e]	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	180	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	180	--	6

[a] NM WQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2018). For metals, the NM WQCC numeric standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2018).

[c] EPA Region 6 RSL for Tapwater (November 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

µg/L = microgram per liter
-- = Validation qualifier not assigned.
AFB = Air Force Base
AMSL = above mean sea level
bgs = below ground surface
CFR = Code of Federal Regulations
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ft = foot (feet)
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligrams per liter
ND = not detected
NM = New Mexico
NMAC = New Mexico Administrative Code
NS = not specified
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
VOC = Volatile organic compound
WQCC = Water Quality Control Commission
Shading = analyte was detected.
Bold/Shading = reported concentration exceeds the project screening level.
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the LOD.

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106003			KAFB-106004			KAFB-106005			KAFB-106005			KAFB-106009		
			Field Sample ID:				GW003-211			GW004-211			GW005-211			GW005-611			GW009-211		
			Sample Date:				1/14/2021			1/13/2021			1/15/2021			1/15/2021			1/11/2021		
			Sample Type:				REG			REG			REG			Field Duplicate			REG		
			Sample Depth (ft bgs):				481			488.74			483.87			482.57			484.39		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	U	0.019	**0.99**	--	0.096	**0.84**	--	0.096	**0.086**	--	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	ND	U	0.5	ND	U	0.5	**700**	--	5	**680**	--	5	3.3	--	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	170	--	0.8	170	--	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	710	--	5	710	--	5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	620	--	2.8	**650**	--	2.8	ND	U	2.8

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106009			KAFB-106012R			KAFB-106013			KAFB-106029			KAFB-106030		
			Field Sample ID:				GW009-611			GW012R-211			GW013-211			GW029-211			GW030-211		
			Sample Date:				1/11/2021			1/11/2021			1/12/2021			1/5/2021			1/5/2021		
			Sample Type:				Field Duplicate			REG			REG			REG			REG		
			Sample Depth (ft bgs):				484.39			495			491			451.7			470.04		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857			4838		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	**0.087**	--	0.019	ND	U	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	3.4	--	0.5	ND	U	0.5	ND	U	0.5	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	0.59	J	0.5	ND	U	0.5	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106031			KAFB-106032			KAFB-106033			KAFB-106034			KAFB-106041		
			Field Sample ID:				GW031-211			GW032-211			GW033-211			GW034-211			GW041-211		
			Sample Date:				1/5/2021			1/6/2021			1/6/2021			1/6/2021			1/6/2021		
			Sample Type:				REG			REG			REG			REG			REG		
			Sample Depth (ft bgs):				495.88			456.7			477.25			502.21			449.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838			4814			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	**0.098**	J	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

						Well Location ID:	KAFB-106049			KAFB-106050			KAFB-106051			KAFB-106063			KAFB-106064		
						Field Sample ID:	GW049-211			GW050-211			GW051-211			106063-LTM-011121			106064-LTM-011121		
						Sample Date:	1/6/2021			1/6/2021			1/6/2021			1/11/2021			1/11/2021		
						Sample Type:	REG			REG			REG			REG			REG		
						Sample Depth (ft bgs):	457.7			473.91			501.08			508			488		
						Reference Elevation Interval (ft AMSL):	4857			4838			4814			4838			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	U	0.011	ND	U	0.010
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	**1,700**	--	5	**3,000**	--	50
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	520	--	10	**1,600**	--	10
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	8.6	J	5	49	--	5
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	**1,400**	--	10	**4,600**	--	10

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106064			KAFB-106097			KAFB-106098			KAFB-106099			KAFB-106100		
			Field Sample ID:				106064-LTM-011121-FD			GW097-211			GW098-211			GW099-211			GW100-211		
			Sample Date:				1/11/2021			1/12/2021			1/12/2021			1/13/2021			1/13/2021		
			Sample Type:				Field Duplicate			REG			REG			REG			REG		
			Sample Depth (ft bgs):				488			508			533			503			528		
			Reference Elevation Interval (ft AMSL):				4857			4838			4814			4838			4814		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.010	ND	UJ	0.019	ND	UJ	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	**3,000**	--	50	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	**1,500**	--	10	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	46	--	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	**4,400**	--	10	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106101			KAFB-106101			KAFB-106102			KAFB-106149-484[e]			KAFB-106151-484[e]		
			Field Sample ID:				GW101-211			GW101-611			GW102-211			GW149-484-211			GW151-484-211		
			Sample Date:				1/13/2021			1/13/2021			1/14/2021			1/7/2021			1/8/2021		
			Sample Type:				REG			Field Duplicate			REG			REG			REG		
			Sample Depth (ft bgs):				500.8			500.8			526			472			469.59		
			Reference Elevation Interval (ft AMSL):				4838			4838			4814			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	**120**	--	19	0.039	J	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106152-484[e]			KAFB-106153-484[e]			KAFB-106201			KAFB-106202			KAFB-106203		
			Field Sample ID:				GW152-484-211			GW153-484-211			GW201-211			GW202-211			GW203-211		
			Sample Date:				1/8/2021			1/7/2021			1/6/2021			1/6/2021			1/6/2021		
			Sample Type:				REG			REG			REG			REG			REG		
			Sample Depth (ft bgs):				472.28			474.89			490.35			519.93			623.11		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4838			4814		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	**0.12**	J	0.019	**27**	--	3.8	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106204			KAFB-106204			KAFB-106205			KAFB-106206			KAFB-106207		
			Field Sample ID:				GW204-211			GW204-611			GW205-211			GW206-211			GW207-211		
			Sample Date:				1/4/2021			1/4/2021			1/4/2021			1/5/2021			1/4/2021		
			Sample Type:				REG			Field Duplicate			REG			REG			REG		
			Sample Depth (ft bgs):				463.7			463.7			493.08			593.83			473.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4838			4814			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	0.014	J	0.019	ND	UJ	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106208			KAFB-106209			KAFB-106216			KAFB-106217			KAFB-106218		
			Field Sample ID:				GW208-211			GW209-211			GW216-211			GW217-211			GW218-211		
			Sample Date:				1/4/2021			1/4/2021			1/4/2021			1/4/2021			1/4/2021		
			Sample Type:				REG			REG			REG			REG			REG		
			Sample Depth (ft bgs):				503.1			602.99			461.9			485.7			552.7		
			Reference Elevation Interval (ft AMSL):				4838			4814			4857			4838			4814		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106218			KAFB-106222			KAFB-106223			KAFB-106224			KAFB-106230		
			Field Sample ID:				GW218-611			GW222-211			GW223-211			GW224-211			GW230-211		
			Sample Date:				1/4/2021			1/4/2021			1/4/2021			1/4/2021			1/6/2021		
			Sample Type:				Field Duplicate			REG			REG			REG			REG		
			Sample Depth (ft bgs):				552.7			461.3			488.7			555.7			501.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838			4814			4814		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	U	0.019	ND	UJ	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106231			KAFB-106232			KAFB-106235-438			KAFB-106235-472			KAFB-106235-501		
			Field Sample ID:				GW231-211			GW232-211			GW235-438-211			GW235-472-211			GW235-501-211		
			Sample Date:				1/5/2021			1/5/2021			1/5/2021			1/5/2021			1/5/2021		
			Sample Type:				REG			REG			REG			REG			REG		
			Sample Depth (ft bgs):				453.7			503.7			441.3			472.7			501.7		
			Reference Elevation Interval (ft AMSL):				4857			4814			4857			4838			4814		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	UJ	0.019	ND	U	0.019	ND	U	0.019	ND	UJ	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106236-436			KAFB-106236-436			KAFB-106236-470			KAFB-106236-499			KAFB-106240-449		
			Field Sample ID:				GW236-436-211			GW236-436-611			GW236-470-211			GW236-499-211			GW240-449-211		
			Sample Date:				1/5/2021			1/5/2021			1/5/2021			1/5/2021			1/7/2021		
			Sample Type:				REG			Field Duplicate			REG			REG			REG		
			Sample Depth (ft bgs):				441.9			441.9			470.7			499.7			473.1		
			Reference Elevation Interval (ft AMSL):				4857			4857			4838			4814			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.5
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.5
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	2.8

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106241-428			KAFB-106241-428			KAFB-106242-418			KAFB-106243-425			KAFB-106244-445		
			Field Sample ID:				GW241-428-211			GW241-428-611			GW242-418-211			GW243-425-211			GW244-445-211		
			Sample Date:				1/6/2021			1/6/2021			1/5/2021			1/7/2021			1/7/2021		
			Sample Type:				REG			Field Duplicate			REG			REG			REG		
			Sample Depth (ft bgs):				452.1			452.1			442.1			446.5			469.1		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	0.029	J	0.019	0.03	J	0.019	ND	UJ	0.019	0.023	J	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.5
		Ethylbenzene	700	700	15	700	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	0.5
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—	—	—	—	ND	U	2.8

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106245-460			KAFB-106247-450			KAFB-106247-450			KAFB-106S1-447			KAFB-106S2-451		
			Field Sample ID:				GW245-460-211			GW247-450-211			GW247-450-611			GWS1-447-211			GWS2-451-211		
			Sample Date:				1/7/2021			1/7/2021			1/7/2021			1/7/2021			1/7/2021		
			Sample Type:				REG			REG			Field Duplicate			REG			REG		
			Sample Depth (ft bgs):				486.7			476.7			476.7			471.1			478.33		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	**120**	--	19	**24**	J	3.8
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	**5,400**	--	50	**1,300**	--	10
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	500	--	8	65	J	1.6
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	**5,900**	--	50	70	J	1
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	**2,300**	--	28	**820**	J	5.6

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106S3-449			KAFB-106S4-446			KAFB-106S5-446			KAFB-106S7-451			KAFB-106S8-451		
			Field Sample ID:				GWS3-449-211			GWS4-446-211			GWS5-446-211			GWS7-451-211			GWS8-451-211		
			Sample Date:				1/8/2021			1/7/2021			1/8/2021			1/8/2021			1/7/2021		
			Sample Type:				REG			REG			REG			REG			REG		
			Sample Depth (ft bgs):				476.28			467.5			470.18			475.1			477.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	**1.7**	J	0.19	0.026	J	0.019	**11**	J	0.95	**10**	J	0.96	**350**	--	96
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	**1,800**	--	5	ND	U	0.5	**2,100**	--	25	**190**	--	0.5	**4,800**	--	50
		Ethylbenzene	700	700	15	700	240	--	0.8	ND	U	0.8	**1,700**	--	40	450	--	8	100	--	8
		Toluene	1,000	1,000	1,100	1,000	38	--	0.5	ND	U	0.5	**10,000**	--	25	350	--	5	**1,100**	--	5
		Xylenes, total	620	10,000	190	620	**1,100**	--	28	ND	U	2.8	**4,000**	--	140	**1,500**	--	28	**1,600**	--	28

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

						Well Location ID:	KAFB-106S9-447		
						Field Sample ID:	GWS9-447-211		
						Sample Date:	1/8/2021		
						Sample Type:	REG		
						Sample Depth (ft bgs):	471.22		
						Reference Elevation Interval (ft AMSL):	4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	0.05	**3.1**	J	0.39
BTEX	Method SW8260C (µg/L)	Benzene	5	5	4.6	5	**3,600**	--	25
		Ethylbenzene	700	700	15	700	500	--	4
		Toluene	1,000	1,000	1,100	1,000	350	--	2.5
		Xylenes, total	620	10,000	190	620	**920**	--	14

Table 4-7
Groundwater Analytical Results for 1,2-Dibromoethane and Benzene, Toluene, Ethylbenzene, and Total Xylenes for Groundwater Monitoring Wells, Q1 2021

[a] NM WQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2018).

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2018).

[c] EPA Region 6 RSL for Tapwater (November 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

[e] Wells initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.

µg/L = microgram per liter
-- = Validation qualifier not assigned.
— = Compound not analyzed.
AFB = Air Force Base
AMSL = above mean sea level
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and total xylenes
CFR = Code of Federal Regulations
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ft = foot (feet)
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NM = New Mexico
NMAC = New Mexico Administrative Code
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
WQCC = Water Quality Control Commission
Shading = analyte was detected
Bold/Shading = reported concentration exceeds the project screening level
Val Quals based on independent data validation

J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.

U = Qualifier denotes the analyte was analyzed but not detected above LOD.

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Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106005			KAFB-106005			KAFB-106009			KAFB-106009		
			Field Sample ID:				GW005-211			GW005-611			GW009-211			GW009-611		
			Sample Date:				1/15/2021			1/15/2021			1/11/2021			1/11/2021		
			Sample Type:				REG			Field Duplicate			REG			Field Duplicate		
			Sample Depth (ft bgs):				483.87			482.57			484.39			484.39		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	150	--	0.15	150	--	0.15	140	--	0.15	140	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	0.043	J	0.1	0.061	J	0.1	0.32	--	0.1	0.28	J	0.1
		Magnesium	NS	NS	NS	NS	26	--	0.075	26	--	0.075	22	--	0.075	22	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	**1.9**	--	0.0052	**2**	--	0.0052	**0.93**	--	0.0052	**0.93**	J	0.0052
		Potassium	NS	NS	NS	NS	3.8	--	0.45	3.8	--	0.45	4.1	--	0.45	4.1	--	0.45
		Sodium	NS	NS	NS	NS	70	--	0.5	69	--	0.5	51	--	0.5	50	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0014	J	0.0016	0.0014	J	0.0016	ND	U	0.0016	ND	U	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00028	J	0.00025	0.00024	J	0.00025	ND	U	0.0005	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	4.1	--	2	3.7	--	2	4.6	J	2	3	J	2
		Chloride	250	NS	NS	250	180	--	15	190	--	15	120	--	15	130	--	15
		Sulfate	600	250	NS	250	9.8	--	4.5	9.5	--	4.5	200	--	45	200	--	45
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	ND	U	0.09	0.98	--	0.18	0.93	--	0.18
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	370	--	6	370	--	6	180	--	6	180	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	370	--	6	370	--	6	180	--	6	180	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106012R			KAFB-106041			KAFB-106149-484[e]			KAFB-106151-484[e]		
			Field Sample ID:				GW012R-211			GW041-211			GW149-484-211			GW151-484-211		
			Sample Date:				1/11/2021			1/6/2021			1/7/2021			1/8/2021		
			Sample Type:				REG			REG			REG			REG		
			Sample Depth (ft bgs):				495			449.7			472			469.59		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	170	--	0.15	59	--	0.15	81	--	0.15	180	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	ND	UJ	0.1	ND	U	0.1	0.24	--	0.1	ND	U	0.21
		Magnesium	NS	NS	NS	NS	26	--	0.075	8.2	--	0.075	13	--	0.075	26	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	ND	UJ	0.0052	ND	U	0.0052	**2.5**	--	0.0052	**0.55**	--	0.0052
		Potassium	NS	NS	NS	NS	5.3	--	0.45	3.3	--	0.45	3.5	--	0.45	4.6	--	0.45
		Sodium	NS	NS	NS	NS	78	--	0.5	28	--	0.5	30	--	0.5	41	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00088	J	0.0016	0.00082	J	0.0016	0.0038	--	0.0016	0.00079	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00038	J	0.00025	ND	U	0.00025	0.00095	--	0.00025	0.000075	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	2.1	J	2	ND	U	2.5	ND	U	2	1.5	J	2
		Chloride	250	NS	NS	250	190	--	15	38	J	6	12	--	1.5	64	--	15
		Sulfate	600	250	NS	250	**310**	--	45	83	--	18	ND	U	4.5	**250**	--	45
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	4.6	--	0.45	0.87	--	0.09	ND	U	0.09	0.29	--	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	100	--	6	100	--	6	270	--	6	250	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	100	--	6	100	--	6	270	--	6	250	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106152-484[e]			KAFB-106153-484[e]			KAFB-106230			KAFB-106240-449		
			Field Sample ID:				GW152-484-211			GW153-484-211			GW230-211			GW240-449-211		
			Sample Date:				1/8/2021			1/7/2021			1/6/2021			1/7/2021		
			Sample Type:				REG			REG			REG			REG		
			Sample Depth (ft bgs):				472.28			474.89			501.7			473.1		
			Reference Elevation Interval (ft AMSL):				4857			4857			4814			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	180	--	0.15	120	J	0.15	40	--	0.15	210	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	**3.9**	--	0.1	**1.5**	--	0.1	ND	U	0.1	ND	U	0.1
		Magnesium	NS	NS	NS	NS	28	--	0.075	18	J	0.075	5.7	--	0.075	30	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	**5.8**	--	0.0052	**2.7**	--	0.0052	ND	U	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	4.3	--	0.45	3.5	--	0.45	2.5	--	0.45	4.6	--	0.45
		Sodium	NS	NS	NS	NS	42	--	0.5	34	J	0.5	22	--	0.5	46	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0024	--	0.0016	0.0016	J	0.0016	0.001	J	0.0016	0.00093	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.0011	--	0.00025	ND	U	0.00025	ND	U	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2.5	1.5	J	2	ND	U	2	4.3	--	2
		Chloride	250	NS	NS	250	43	--	15	16	--	1.5	27	J	1.5	160	--	15
		Sulfate	600	250	NS	250	ND	U	5	ND	U	4.5	49	--	4.5	**340**	--	45
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	ND	U	0.09	0.65	--	0.09	6	--	0.9
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	520	--	6	350	--	6	93	--	6	81	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	520	--	6	350	--	6	93	--	6	81	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106241-428			KAFB-106241-428			KAFB-106242-418			KAFB-106243-425		
			Field Sample ID:				GW241-428-211			GW241-428-611			GW242-418-211			GW243-425-211		
			Sample Date:				1/6/2021			1/6/2021			1/5/2021			1/7/2021		
			Sample Type:				REG			Field Duplicate			REG			REG		
			Sample Depth (ft bgs):				452.1			452.1			442.1			446.5		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	49	--	0.15	48	--	0.15	160	--	0.15	51	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Magnesium	NS	NS	NS	NS	7	--	0.075	6.8	--	0.075	24	--	0.075	7	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	2.7	--	0.45	2.7	--	0.45	5	--	0.45	2.5	--	0.45
		Sodium	NS	NS	NS	NS	27	--	0.5	26	--	0.5	49	--	0.5	26	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0009	J	0.0016	0.00098	J	0.0016	0.00084	J	0.0016	0.0012	J	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	ND	U	0.00025	ND	U	0.00025	0.000087	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2.5	ND	U	2.5	ND	U	200	ND	U	2
		Chloride	250	NS	NS	250	28	J	6	29	J	6	200	--	15	17	--	1.5
		Sulfate	600	250	NS	250	43	J	4.5	44	--	4.5	150	--	45	38	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	0.076	J	0.09	0.32	--	0.09	6.4	--	0.45	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	160	--	6	120	--	6	120	--	6	150	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	160	--	6	120	--	6	120	--	6	150	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106244-445			KAFB-106245-460			KAFB-106247-450			KAFB-106247-450		
			Field Sample ID:				GW244-445-211			GW245-460-211			GW247-450-211			GW247-450-611		
			Sample Date:				1/7/2021			1/7/2021			1/7/2021			1/7/2021		
			Sample Type:				REG			REG			REG			Field Duplicate		
			Sample Depth (ft bgs):				469.1			486.7			476.7			476.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	140	--	0.15	77	--	0.15	48	--	0.15	51	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Magnesium	NS	NS	NS	NS	21	--	0.075	11	--	0.075	7	--	0.075	7.3	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	4.6	--	0.45	2.7	--	0.45	2.4	--	0.45	2.5	--	0.45
		Sodium	NS	NS	NS	NS	58	--	0.5	29	--	0.5	26	--	0.5	27	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.001	J	0.0016	0.0011	J	0.0016	ND	U	0.0016	ND	U	0.0016
		Lead	0.015	0.015	0.015	0.015	0.000088	J	0.00025	ND	U	0.00025	ND	U	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2	3.5	--	2	ND	U	2	ND	U	2
		Chloride	250	NS	NS	250	100	--	15	65	--	15	12	J	1.5	11	J	1.5
		Sulfate	600	250	NS	250	**250**	--	45	85	--	45	33	--	4.5	29	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	3.5	--	0.45	**11**	--	0.45	0.68	--	0.09	0.59	--	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	99	--	6	100	--	6	160	--	6	150	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	99	--	6	100	--	6	160	--	6	150	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106S1-447			KAFB-106S2-451			KAFB-106S3-449			KAFB-106S4-446		
			Field Sample ID:				GWS1-447-211			GWS2-451-211			GWS3-449-211			GWS4-446-211		
			Sample Date:				1/7/2021			1/7/2021			1/8/2021			1/7/2021		
			Sample Type:				REG			REG			REG			REG		
			Sample Depth (ft bgs):				471.1			478.33			476.28			467.5		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	90	--	0.15	150	--	0.15	160	--	0.15	190	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	0.33	--	0.1	**2.1**	J	0.1	**4.8**	--	0.1	ND	U	0.1
		Magnesium	NS	NS	NS	NS	15	--	0.075	25	--	0.075	27	--	0.075	29	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	**2.9**	J	0.0052	**7**	J	0.0052	**3.9**	--	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	3	--	0.45	3.8	--	0.45	4	--	0.45	4.9	--	0.45
		Sodium	NS	NS	NS	NS	32	--	0.5	41	--	0.5	43	--	0.5	66	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.003	--	0.0016	0.002	--	0.0016	0.0061	--	0.0016	0.00081	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00032	J	0.00025	0.0018	--	0.00025	0.00081	--	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	2.1	J	2	3.5	--	2	2.7	--	2	4.1	--	2
		Chloride	250	NS	NS	250	19	--	1.5	150	--	15	140	--	15	170	--	15
		Sulfate	600	250	NS	250	6.2	--	4.5	1.7	J	4.5	ND	U	5	**370**	--	45
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	ND	U	0.09	ND	U	0.09	6.9	--	0.9
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	280	--	6	380	--	6	420	--	6	93	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	280	--	6	380	--	6	420	--	6	93	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

			Well Location ID:				KAFB-106S5-446			KAFB-106S7-451			KAFB-106S8-451			KAFB-106S9-447		
			Field Sample ID:				GWS5-446-211			GWS7-451-211			GWS8-451-211			GWS9-447-211		
			Sample Date:				1/8/2021			1/8/2021			1/7/2021			1/8/2021		
			Sample Type:				REG			REG			REG			REG		
			Sample Depth (ft bgs):				470.18			475.1			477.7			471.22		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857			4857		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	65	--	0.15	110	--	0.15	180	--	0.15	180	--	0.15
		Iron, dissolved	1.0	NS	14	1.0	**1.1**	--	0.1	ND	U	0.1	**3.2**	--	0.1	ND	U	0.21
		Magnesium	NS	NS	NS	NS	10	--	0.075	17	--	0.075	27	--	0.075	30	--	0.075
		Manganese, dissolved	0.2	NS	0.43	0.2	**1.8**	--	0.0052	**2.4**	--	0.0052	**6**	J	0.0052	**2.8**	--	0.0052
		Potassium	NS	NS	NS	NS	2.8	--	0.45	3.5	--	0.45	4	--	0.45	5	--	0.45
		Sodium	NS	NS	NS	NS	27	--	0.5	38	--	0.5	41	--	0.5	43	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0026	--	0.0016	0.0064	--	0.0016	0.0044	--	0.0016	0.0023	--	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00037	J	0.00025	0.00016	J	0.00025	0.000072	J	0.00025	0.00097	--	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2.5	1.8	J	2	2.1	J	2	ND	U	2.5
		Chloride	250	NS	NS	250	22	--	1.5	47	--	15	9.2	--	1.5	63	--	15
		Sulfate	600	250	NS	250	ND	U	5	2.6	J	4.5	ND	U	4.5	120	--	45
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	ND	U	0.09	ND	U	0.09	0.17	--	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	NS	NS	NS	220	--	6	320	--	6	440	--	6	450	--	6
		Alkalinity, carbonate (as CaCO3)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as CaCO3)	NS	NS	NS	NS	220	--	6	320	--	6	440	--	6	450	--	6

Table 4-8
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2021

[a] NM WQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2018). For metals, the NM WQCC numeric standard applies to dissolved metals.

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2018).

[c] EPA Region 6 RSL for Tapwater (November 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

[e] Wells initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.

[f] Based on the geochemical equilibrium of the site groundwater and previous site data analyses, nitrate/nitrite results represent nitrate concentrations.

-- = Validation qualifier not assigned.
AFB = Air Force Base
AMSL = above mean sea level
bgs = below ground surface
$CaCO_3$ = calcium carbonate
CFR = Code of Federal Regulations
EPA = U.S. Environmental Protection Agency
ft = foot (feet)
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NM = New Mexico
NMAC = New Mexico Administrative Code
NS = not specified
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
WQCC = Water Quality Control Commission
Shading = analyte was detected.
Bold/Shading = reported concentration exceeds the project screening level
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the LOD.

Table 4-9
Historical 1,2-Dibromoethane Concentrations

Analyte:			EDB (1,2-dibromoethane)		
EPA MCL[a]:			0.05 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD
KAFB-106003	1/14/2021	Q1 2021	ND	UJ	0.019
	10/13/2020	Q4 2020	ND	U	0.019
	7/15/2020	Q3 2020	ND	U	0.019
	1/17/2020	Q1 2020	ND	U	0.019
KAFB-106004	1/13/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/16/2020	Q3 2020	ND	U	0.02
	5/5/2020	Q2 2020	ND	U	0.019
KAFB-106005	1/15/2021	Q1 2021	**0.99**	--	0.096
	10/23/2020	Q4 2020	**0.40**	--	0.096
	7/13/2020	Q3 2020	**1.9**	J	0.39
	4/16/2020	Q2 2020	0.016	J	0.019
KAFB-106009	1/11/2021	Q1 2021	**0.086**	--	0.019
	10/12/2020	Q4 2020	0.017	J	0.019
	7/9/2020	Q3 2020	0.019	J	0.019
	4/16/2020	Q2 2020	0.016	J	0.019
KAFB-106012R	1/11/2021	Q1 2021	ND	U	0.019
	10/2/2020	Q4 2020	ND	U	0.019
	7/14/2020	Q3 2020	ND	U	0.019
	4/23/2020	Q2 2020	ND	U	0.019
KAFB-106013	1/12/2021	Q1 2021	ND	UJ	0.019
	10/13/2020	Q4 2020	ND	U	0.019
	7/15/2020	Q3 2020	ND	UJ	0.019
	5/1/2020	Q2 2020	ND	U	0.019
KAFB-106029	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106030	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106031	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106032	1/6/2021	Q1 2021	ND	UJ	0.019
	10/8/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/8/2020	Q2 2020	ND	U	0.019
KAFB-106033	1/6/2021	Q1 2021	ND	UJ	0.019
	10/8/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/8/2020	Q2 2020	ND	U	0.019
KAFB-106034	1/6/2021	Q1 2021	ND	UJ	0.019
	10/8/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/8/2020	Q2 2020	ND	U	0.019
KAFB-106041	1/6/2021	Q1 2021	**0.098**	J	0.019
	10/8/2020	Q4 2020	**0.074**	--	0.019
	7/8/2020	Q3 2020	0.016	J	0.019
	4/9/2020	Q2 2020	**0.054**	--	0.019
KAFB-106049	1/6/2021	Q1 2021	ND	UJ	0.019
	10/12/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106050	1/6/2021	Q1 2021	ND	UJ	0.019
	10/12/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106051	1/6/2021	Q1 2021	ND	UJ	0.019
	10/15/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106063[c]	1/11/2021	Q1 2021	ND	U	0.011
	10/14/2020	Q4 2020	ND	U	0.019
	5/19/2020	Q2 2020	ND	U	0.019
	10/4/2018	Q4 2018	**3.6**	J	0.38
KAFB-106064[c]	1/11/2021	Q1 2021	ND	U	0.010
	10/14/2020	Q4 2020	ND	U	0.019
	5/19/2020	Q2 2020	ND	U	0.019
	10/4/2018	Q4 2018	**0.25**	--	0.019
KAFB-106097	1/12/2021	Q1 2021	ND	UJ	0.019
	10/13/2020	Q4 2020	ND	U	0.019
	7/16/2020	Q3 2020	ND	U	0.019
	5/1/2020	Q2 2020	ND	U	0.019
KAFB-106098	1/12/2021	Q1 2021	ND	UJ	0.019
	10/13/2020	Q4 2020	ND	U	0.019
	7/15/2020	Q3 2020	ND	U	0.019
	5/1/2020	Q2 2020	ND	U	0.019
KAFB-106099	1/13/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/16/2020	Q3 2020	ND	U	0.019
	5/5/2020	Q2 2020	ND	U	0.019

Table 4-9
Historical 1,2-Dibromoethane Concentrations

Analyte:			EDB (1,2-dibromoethane)		
EPA MCL[a]:			0.05 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD
KAFB-106100	1/13/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/16/2020	Q3 2020	ND	U	0.019
	5/5/2020	Q2 2020	ND	U	0.019
KAFB-106101	1/13/2021	Q1 2021	ND	UJ	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/15/2020	Q3 2020	ND	U	0.019
	5/4/2020	Q2 2020	ND	U	0.019
KAFB-106102	1/14/2021	Q1 2021	ND	UJ	0.019
	10/15/2020	Q4 2020	ND	U	0.019
	7/15/2020	Q3 2020	ND	U	0.019
	5/4/2020	Q2 2020	ND	U	0.019
KAFB-106149-484[d]	1/7/2021	Q1 2021	**120**	--	19
	10/21/2020	Q4 2020	**17**	--	3.8
	7/10/2020	Q3 2020	**11**	--	1.9
	4/16/2020	Q2 2020	**78**	--	19
KAFB-106151-484[d]	1/8/2021	Q1 2021	0.039	J	0.019
	10/21/2020	Q4 2020	0.030	--	0.019
	7/10/2020	Q3 2020	0.023	J	0.019
	4/16/2020	Q2 2020	**2.6**	--	0.38
KAFB-106152-484[d]	1/8/2021	Q1 2021	**0.12**	J	0.019
	10/21/2020	Q4 2020	ND	U	0.019
	7/10/2020	Q3 2020	0.019	J	0.019
	4/16/2020	Q2 2020	ND	U	0.019
KAFB-106153-484[d]	1/7/2021	Q1 2021	**27**	--	3.8
	10/21/2020	Q4 2020	**35**	--	3.8
	7/10/2020	Q3 2020	**30**	--	3.8
	4/16/2020	Q2 2020	**140**	--	19
KAFB-106201	1/6/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106202	1/6/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106203	1/6/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106204	1/4/2021	Q1 2021	ND	U	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106205	1/4/2021	Q1 2021	0.014	J	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106206	1/5/2021	Q1 2021	ND	UJ	0.019
	10/12/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106207	1/4/2021	Q1 2021	ND	U	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/10/2020	Q2 2020	ND	U	0.019
KAFB-106208	1/4/2021	Q1 2021	ND	U	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/10/2020	Q2 2020	ND	U	0.019
KAFB-106209	1/4/2021	Q1 2021	ND	U	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/10/2020	Q2 2020	ND	U	0.019
KAFB-106216	1/4/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106217	1/4/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.020
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106218	1/4/2021	Q1 2021	ND	U	0.019
	10/7/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106222	1/4/2021	Q1 2021	ND	UJ	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106223	1/4/2021	Q1 2021	ND	UJ	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019

Table 4-9
Historical 1,2-Dibromoethane Concentrations

Analyte:			EDB (1,2-dibromoethane)		
EPA MCL[a]:			0.05 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD
KAFB-106224	1/4/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/7/2020	Q2 2020	ND	U	0.019
KAFB-106230	1/6/2021	Q1 2021	ND	UJ	0.019
	10/12/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/10/2020	Q2 2020	ND	U	0.019
KAFB-106231	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106232	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106235-438	1/5/2021	Q1 2021	ND	U	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106235-472	1/5/2021	Q1 2021	ND	U	0.019
	10/5/2020	Q4 2020	0.015	J	0.02
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106235-501	1/5/2021	Q1 2021	ND	UJ	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106236-436	1/5/2021	Q1 2021	ND	UJ	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106236-470	1/5/2021	Q1 2021	ND	UJ	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106236-499	1/5/2021	Q1 2021	ND	UJ	0.019
	10/5/2020	Q4 2020	ND	U	0.019
	7/6/2020	Q3 2020	ND	U	0.019
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106240-449	1/7/2021	Q1 2021	ND	U	0.019
	10/15/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.020
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106241-428	1/6/2021	Q1 2021	0.029	J	0.019
	10/12/2020	Q4 2020	0.015	J	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	0.015	J	0.019
KAFB-106242-418	1/5/2021	Q1 2021	ND	UJ	0.019
	10/6/2020	Q4 2020	ND	U	0.019
	7/7/2020	Q3 2020	ND	U	0.02
	4/6/2020	Q2 2020	ND	U	0.019
KAFB-106243-425	1/7/2021	Q1 2021	0.023	J	0.019
	10/13/2020	Q4 2020	0.042	--	0.019
	7/9/2020	Q3 2020	0.035	--	0.019
	4/9/2020	Q2 2020	0.02	J	0.019
KAFB-106244-445	1/7/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.02
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106245-460	1/7/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/9/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106247-450	1/7/2021	Q1 2021	ND	U	0.019
	10/14/2020	Q4 2020	ND	U	0.019
	7/8/2020	Q3 2020	ND	U	0.019
	4/9/2020	Q2 2020	ND	U	0.019
KAFB-106S1-447	1/7/2021	Q1 2021	**120**	--	19
	10/21/2020	Q4 2020	**5.3**	--	0.96
	7/10/2020	Q3 2020	**28**	J	3.9
	4/9/2020	Q2 2020	**390**	--	190
KAFB-106S2-451	1/7/2021	Q1 2021	**24**	J	3.8
	10/22/2020	Q4 2020	**37**	--	3.9
	7/10/2020	Q3 2020	**150**	--	38
	4/9/2020	Q2 2020	**120**	--	19
KAFB-106S3-449	1/8/2021	Q1 2021	**1.7**	J	0.19
	10/22/2020	Q4 2020	**1.6**	--	3.8
	7/10/2020	Q3 2020	**75**	--	9.6
	4/10/2020	Q2 2020	**35**	J	7.6
KAFB-106S4-446	1/7/2021	Q1 2021	0.026	J	0.019
	10/22/2020	Q4 2020	0.021	J	0.019
	7/9/2020	Q3 2020	0.035	--	0.019
	4/9/2020	Q2 2020	ND	U	0.048

Table 4-9
Historical 1,2-Dibromoethane Concentrations

Analyte:			EDB (1,2-dibromoethane)		
EPA MCL[a]:			0.05 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD
KAFB-106S5-446	1/8/2021	Q1 2021	**11**	J	0.95
	10/22/2020	Q4 2020	**8.9**	--	0.97
	7/10/2020	Q3 2020	**3.1**	--	0.39
	4/16/2020	Q2 2020	**11**	--	1.9
KAFB-106S7-451	1/8/2021	Q1 2021	**10**	J	0.96
	10/22/2020	Q4 2020	**26**	--	3.8
	7/10/2020	Q3 2020	**36**	--	3.8
	4/16/2020	Q2 2020	**39**	--	7.5
KAFB-106S8-451	1/7/2021	Q1 2021	**350**	--	96
	10/21/2020	Q4 2020	**28**	J	3.8
	7/10/2020	Q3 2020	**310**	--	38
	4/10/2020	Q2 2020	**400**	J	76
KAFB-106S9-447	1/8/2021	Q1 2021	**3.1**	J	0.39
	10/21/2020	Q4 2020	0.018	J	0.019
	7/10/2020	Q3 2020	**0.21**	--	0.019
	4/16/2020	Q2 2020	**35**	--	7.6
KAFB-106S10-443[e]	1/15/2021	Q1 2021	**200**	--	39

[a] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC standard or MCL exists for any analyte, then the project screening level is the EPA RSL. For EDB, the EPA MCL and the NM WQCC numeric standard are both 0.05 µg/L.

[b] Data presented includes results from the current quarter along with the three most recent historical results.

[c] This well was not sampled in 2019 due to the presence of dedicated downhole equipment related to the EDB *in situ* biodegradation pilot test. Monitoring resumed in 2020.

[d] Wells initially installed for vadose zone characterization. These wells were added to the GWM network to temporarily fill a data gap as the water level rose across the site.

[e] This well was sampled for the first time in Q1 2021.

µg/L = microgram per liter
-- = Validation qualifier not assigned.
AFB = Air Force Base
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ID = identification
KAFB = Kirtland Air Force Base
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NM = New Mexico
Q1 = first quarter
Q2 = second quarter
Q3 = third quarter
Q4 = fourth quarter
RSL = regional screening level
Val Qual = validation qualifier
WQCC = Water Quality Control Commission
Shading = detected concentrations above the LOD.
Bold/Shading = reported concentration exceeds the project screening level.
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above LOD.

Table 4-10
Historical Benzene, Toluene, Ethylbenzene, and Total Xylenes Concentrations

Analyte:			Benzene			Ethylbenzene			Toluene			Xylenes, Total		
Project Screening Level[a]:			5 µg/L			700 µg/L			1,000 µg/L			620 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106003	1/14/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/12/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/15/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/30/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106004	1/13/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/16/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/5/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106005	1/15/2021	Q1 2021	**700**	--	5.0	170	--	0.80	710	--	5.0	**620**	--	2.8
	10/23/2020	Q4 2020	**860**	--	2.5	230	--	4.0	**1,000**	--	2.5	**880**	--	10
	7/13/2020	Q3 2020	**1,700**	--	10	220	--	1.6	**1,800**	--	10	**840**	--	4
	4/16/2020	Q2 2020	**12**	J	0.5	110	--	0.8	2	--	0.5	160	--	2
KAFB-106009	1/11/2021	Q1 2021	3.3	--	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/12/2020	Q4 2020	ND	U	5.0	ND	U	8.0	ND	U	5.0	ND	U	20
	7/9/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	4/16/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106012R	1/11/2021	Q1 2021	ND	U	0.50	ND	U	0.80	0.59	J	0.50	ND	U	2.8
	10/2/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/14/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	--	0.50	ND	U	2.0
	4/23/2020	Q2 2020	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
KAFB-106013	1/12/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/13/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/15/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106063[c]	1/11/2021	Q1 2021	**1,700**	--	5	520	--	10	8.6	J	5	**1,400**	--	10
	10/14/2020	Q4 2020	**3,900**	--	50	**1,000**	--	8.0	**1,700**	--	5.0	**3,000**	--	20
	5/19/2020	Q2 2020	**5,700**	--	50	**1,700**	--	8	**18,000**	--	50	**5,100**	--	20
	10/4/2018	Q4 2018	**6,400**	--	50	**2,000**	--	8	**20,000**	--	50	**5,700**	--	20
KAFB-106064[c]	1/11/2021	Q1 2021	**3,000**	--	50	**1,600**	--	10	49	--	5	**4,600**	--	10
	10/14/2020	Q4 2020	**3,700**	--	25	**1,200**	--	4.0	430	--	2.5	**4,100**	--	10
	5/19/2020	Q2 2020	**3,600**	--	25	**1,500**	--	40	380	--	3	**4,700**	--	100
	10/4/2018	Q4 2018	**3,600**	--	50	**1,200**	--	8	**12,000**	--	50	**3,800**	--	20
KAFB-106097	1/12/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/13/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/16/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106098	1/12/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/13/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/15/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106099	1/13/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/16/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/5/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106100	1/13/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/16/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/5/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2

Table 4-10
Historical Benzene, Toluene, Ethylbenzene, and Total Xylenes Concentrations

Analyte:			Benzene			Ethylbenzene			Toluene			Xylenes, Total		
Project Screening Level[a]:			5 µg/L			700 µg/L			1,000 µg/L			620 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106101	1/13/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/15/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/4/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106102	1/14/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/15/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/15/2020	Q3 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/4/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106240-449	1/7/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/15/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/8/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	4/9/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106244-445	1/7/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/8/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	4/9/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106245-460	1/7/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/9/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2
	4/9/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2.0
KAFB-106247-450	1/7/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/14/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/8/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	4/9/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106S1-447	1/7/2021	Q1 2021	**5,400**	--	50	500	--	8	**5,900**	--	50	**2,300**	--	28
	10/21/2020	Q4 2020	**1,700**	--	50	590	--	80	**4,000**	--	50	**3,000**	--	200
	7/10/2020	Q3 2020	**5,000**	--	50	500	J	8	**6,300**	--	50	**2,800**	J	20
	4/9/2020	Q2 2020	**7,900**	--	50	**710**	--	8	**9,300**	--	50	**3,300**	--	20
KAFB-106S2-451	1/7/2021	Q1 2021	**1,300**	--	10	65	J	1.6	70	J	1	**820**	J	5.6
	10/22/2020	Q4 2020	**730**	--	2.5	18	--	4.0	54	--	2.5	550	--	10
	7/10/2020	Q3 2020	**1,100**	--	5	130	--	8	320	--	5	**1,200**	--	20
	4/9/2020	Q2 2020	**4,900**	--	25	420	--	4	**2,500**	--	25	**2,700**	--	10
KAFB-106S3-449	1/8/2021	Q1 2021	**1,800**	--	5	240	--	0.8	38	--	0.5	**1,100**	--	28
	10/22/2020	Q4 2020	**540**	--	1.0	12	--	1.6	5.1	--	1.0	**730**	--	40
	7/10/2020	Q3 2020	**200**	--	5	24	--	8	5	J	5	450	--	20
	4/10/2020	Q2 2020	**3,800**	--	25	**720**	--	4	**1,300**	--	3	**2,200**	--	10
KAFB-106S4-446	1/7/2021	Q1 2021	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.8
	10/22/2020	Q4 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	7/9/2020	Q3 2020	ND	U	0.50	ND	U	0.80	ND	U	0.50	ND	U	2.0
	4/9/2020	Q2 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106S5-446	1/8/2021	Q1 2021	**2,100**	--	25	**1,700**	--	40	**10,000**	--	25	**4,000**	--	140
	10/22/2020	Q4 2020	**1,300**	--	5.0	**1,200**	--	8.0	**7,000**	--	50	**2,700**	--	20
	7/10/2020	Q3 2020	**990**	--	10	**1,300**	--	16	**3,400**	--	10	**2,400**	--	40
	4/16/2020	Q2 2020	**1,900**	--	5	**1,500**	--	8	**5,200**	--	50	**2,900**	--	20
KAFB-106S7-451	1/8/2021	Q1 2021	**190**	--	0.5	450	--	8	350	--	5	**1,500**	--	28
	10/22/2020	Q4 2020	**310**	--	2.5	**700**	--	4.0	**1,600**	--	25	**2,100**	--	10
	7/10/2020	Q3 2020	**520**	--	5	**1,000**	--	8	**1,700**	--	5	**3,300**	--	20
	4/16/2020	Q2 2020	**1,200**	--	10	640	--	16	**1,700**	--	10	**2,200**	--	40

Table 4-10
Historical Benzene, Toluene, Ethylbenzene, and Total Xylenes Concentrations

Analyte:			Benzene			Ethylbenzene			Toluene			Xylenes, Total		
Project Screening Level[a]:			5 µg/L			700 µg/L			1,000 µg/L			620 µg/L		
Well Location ID	Sample Date	Sampling Quarter[b]	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106S8-451	1/7/2021	Q1 2021	**4,800**	--	50	100	--	8	**1,100**	--	5	**1,600**	--	28
	10/21/2020	Q4 2020	**770**	J	2.5	15	--	4	390	J	2.5	130	--	10
	7/10/2020	Q3 2020	**5,000**	--	50	150	--	80	**3,300**	--	50	**2,000**	--	200
	4/10/2020	Q2 2020	**4,400**	--	25	210	--	4	**6,400**	--	25	**2,100**	--	10
KAFB-106S9-447	1/8/2021	Q1 2021	**3,600**	--	25	500	--	4	350	--	2.5	**920**	--	14
	10/21/2020	Q4 2020	**36**	--	0.50	52	--	0.80	1.9	--	0.50	65	--	2.0
	7/10/2020	Q3 2020	**4,200**	--	50	620	--	8	**1,700**	--	5	**1,300**	--	20
	4/16/2020	Q2 2020	**9,900**	--	100	**1,100**	--	16	**12,000**	--	100	**3,400**	--	40
KAFB-106S10-443[d]	1/15/2021	Q1 2021	**11,000**	--	25	670	--	4	**17,000**	--	250	**3,000**	--	14

[a] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC standard or MCL exists for any analyte, then the project screening level will be the EPA Tapwater RSL. For benzene, ethylbenzene, and toluene, the project screening level is the EPA MCL. For total xylenes, the project screening level is the NM WQCC numeric standard.

[b] Data presented include results from the current quarter along with the three most recent historical results.

[c] This well was not sampled in 2019 due to the presence of dedicated downhole equipment related to the EDB *in situ* biodegradation pilot test. Monitoring was resumed in 2020.

[d] This well was sampled for the first time in Q1 2021.

µg/L = microgram per liter
-- = Validation qualifier not assigned.
AFB = Air Force Base
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ID = identification
KAFB = Kirtland Air Force Base
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NM = New Mexico
Q1 = first quarter
Q2 = second quarter
Q3 = third quarter
Q4 = fourth quarter
RSL = regional screening level
Val Qual = validation qualifier
WQCC = New Mexico Water Quality Control Commission
Shading = detected concentrations above the LOD.
Bold/Shading = reported concentration exceeds the project screening level
Val Quals based on independent data validation
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the LOD.

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Table 4-11
Drinking Water Supply Well Analytical Results, Q1 2021

		Well Location ID:		KAFB-003			KAFB-016			ST106-VA2			ST106-VA2			KAFB-003		
		Field Sample ID:		GWK003-2111			GWK016-2111			GWVA2-2111			GWVA2-6111			GWK003-2112		
		Sample Date:		1/5/2021			1/5/2021			1/5/2021			1/5/2021			2/10/2021		
		Sample Type:		REG			REG			REG			Field Duplicate			REG		
Parameter	**Analytical Method**	**Analyte**	**EPA MCL**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**
EDB	Method E504.1 (µg/L)	1,2-Dibromoethane	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.018	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (µg/L)	Benzene	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Toluene	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	10,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NA	19.0			23.7			20.3			20.3			18.2		
		Specific Conductance (µS/cm)	NA	410.7			474.7			416.6			416.6			427.8		
		pH (S.U.)	NA	7.78			7.44			7.80			7.80			7.98		
		ORP (mV)	NA	293.1			371.8			327.3			327.3			256.8		
		DO (mg/L)	NA	4.52			1.12			1.60			1.60			3.37		
		Turbidity (NTU)	NA	0.73			0.28			0.24			0.24			0.67		

Table 4-11
Drinking Water Supply Well Analytical Results, Q1 2021

		Well Location ID:		KAFB-015			KAFB-016			KAFB-003			KAFB-016			ST106-VA2		
		Field Sample ID:		GWK015-2112			GWK016-2112			GWK003-2113			GWK016-213			GWVA2-2113		
		Sample Date:		2/10/2021			2/10/2021			3/9/2021			3/9/2021			3/9/2021		
		Sample Type:		REG			REG			REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**EPA MCL**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**
EDB	Method E504.1 (µg/L)	1,2-Dibromoethane	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.017	ND	U	0.017	ND	U	0.017
BTEX	Method E524.2 (µg/L)	Benzene	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Toluene	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	10,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NA	22.1			21.8			20.0			22.3			20.5		
		Specific Conductance (µS/cm)	NA	509.7			419.1			412.1			569			438.9		
		pH (S.U.)	NA	7.91			6.45			7.68			6.73			8.00		
		ORP (mV)	NA	198.9			314.8			125.4			205.0			236.1		
		DO (mg/L)	NA	0.77			2.17			4.49			0.79			1.94		
		Turbidity (NTU)	NA	0.78			1.65			0.88			0.72			0.97		

Table 4-11
Drinking Water Supply Well Analytical Results, Q1 2021

		Well Location ID:		ST106-VA2		
		Field Sample ID:		GWVA2-6113		
		Sample Date:		3/9/2021		
		Sample Type:		Field Duplicate		
Parameter	**Analytical Method**	**Analyte**	**EPA MCL**	**Result**	**Val Qual**	**LOQ**
EDB	Method E504.1 (µg/L)	1,2-Dibromoethane	0.05	ND	U	0.017
BTEX	Method E524.2 (µg/L)	Benzene	5	ND	U	0.5
		Ethylbenzene	700	ND	U	0.5
		Toluene	1,000	ND	U	0.5
		Xylenes, total	10,000	ND	U	0.5
Field Parameters		Temperature (°C)	NA	20.5		
		Specific Conductance (µS/cm)	NA	438.9		
		pH (S.U.)	NA	8.00		
		ORP (mV)	NA	236.1		
		DO (mg/L)	NA	1.94		
		Turbidity (NTU)	NA	0.97		

Table 4-11
Drinking Water Supply Well Analytical Results, Q1 2021

µg/L = micrograms per liter
µS/cm = micro siemens per centimeter
-- = Validation qualifier not assigned.
ºC = degree Celsius
BTEX = benzene, toluene, ethylbenzene, and total xylenes
DO = dissolved oxygen
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
GW = groundwater
ID = identification
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/L = milligram per liter
mV = millivolt
NA = not applicable
ND = nondetect
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
Q1 = first quarter
REG = normal field sample
S.U. = standard unit
VA = U.S. Department of Veterans Affairs
Val Qual = validation qualifier
Val Quals based on independent data validation:
U = Qualifier denotes the analyte was analyzed but not detected above the LOQ.
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.

Table 5-1
DP-1839 Discharge Permit Terms and Conditions, Operations and Maintenance Plan Cross References

Condition No.	Terms and Conditions	Reference Location in Quarterly Report
15	The Permittee shall ensure the treated effluent conveyance system, i.e., piping, between the GWTS and the UIC well(s) does not leak and shall report any such leakage to the NMED GWQB in accordance with 20.6.2.1203(A) NMAC and copy the NMED HWB.	5.3.4 Effluent Conveyance Line Integrity (not applicable in Q1 2021)
	Within 1 year of the effective date of this Discharge Permit, the Permittee shall demonstrate the structural integrity of the treated effluent conveyance system between the GWTS and KAFB-7.	5.3.4 Effluent Conveyance Line Integrity (not applicable in Q1 2021)
	Prior to testing, the Permittee shall propose for NMED approval the test method to be used.	5.3.4 Effluent Conveyance Line Integrity (not applicable in Q1 2021)
	The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion.	5.3.4 Effluent Conveyance Line Integrity (not applicable in Q1 2021)
	The Permittee shall integrity test the treated effluent conveyance system between GWTS and the UIC well(s) prior to submitting a permit renewal application. [20.6.2.3106(C) NMAC, 20.6.2.3107(A) NMAC]	5.3.4 Effluent Conveyance Line Integrity (not applicable in Q1 2021)
17	The Permittee shall conduct the monitoring, operations, and reporting listed below.	5.1 Groundwater Treatment System Operation
	Unless otherwise specified, all periodic monitoring results or general information obtained shall be reported in the forthcoming quarterly report. [20.6.2.3107 NMAC]	5.1 Groundwater Treatment System Operation
18	Unless otherwise approved by NMED, the Permittee shall conduct sampling in accordance with standard industry practice.	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal
	Sampling in accordance with the most current version of the GWTS Sampling and Analysis Plan (Appendix L of the O&M Plan), which includes sampling locations, procedures, field measurements, quality control samples, handling and custody, analytical methods, quality control, analytical validation, and reporting requirements, satisfies this Condition. [20.6.2.3107(B) NMAC]	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal
19	The Permittee shall submit quarterly and annual reports to NMED pursuant to the most recent NMED HWB approved Work Plans.	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal
	The Permittee shall identify the portions of these reports pertaining to this Discharge Permit with a table in the reports that identifies those portions.	Table 5-1 DP-1839 Discharge Permit Terms and Conditions, Operations and Maintenance Plan Cross References
	Quarterly reports shall be submitted as specified below unless otherwise authorized by NMED: • January 1st through March 31st - due by June 30th • April 1st through June 30th - due by September 30th • July 1st through September 30th - due by December 31st • October 1st through December 31st - due by March 31st	Noted
	Annual reporting requirements for the previous year, i.e., January 1 through December 31, shall be reported in the March 31 quarterly report. [20.6.2.3107(A) NMAC]	Noted
20	The Permittee shall monitor the concentration of all COCs listed on Table 2 in GWTS treated effluent. Associated sampling and analysis shall be performed monthly at a minimum.	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal Table 5-6 Monthly GWTS Performance Analytical Results for Train 1, Q1 2021 Table 5-7 Monthly GWTS Performance Analytical Results for Train 2, Q1 2021
	When groundwater from a new extraction well is first introduced to the GWTS, COC monitoring of the GWTS treated effluent shall occur daily for the first week of treatment, weekly for the first month of treatment, and monthly thereafter.	Not applicable in Q1 2021
	If alterations to, or conditions at, the GWTS result in a potential impact to effluent quality, the Permittee will repeat this sampling sequence as directed by NMED.	No effluent quality impacts Q1 2021
20	A representative sample of GWTS influent and effluent shall be analyzed annually for the constituents identified in Table 3.	Performed in Q1 2021. Table 5-8 GWTS Annual Analytical Result Q1 2021
	A representative sample of GWTS influent and effluent shall be analyzed every 5 years for the constituents identified in Table 4	Performed in Q3 2017; last reported in Q3 2017; Not applicable to Q1 2021
	The first analysis of the 5-year constituent list shall occur in July 2017. Any newly identified constituents detected during the 5-year sampling events will be added to the annual sampling constituent list in Table 3.	Performed in Q3 2017; last reported in Q3 2017; Not applicable to Q1 2021
	All analysis of GWTS influent and effluent shall utilize analytical methods with detection limits that are sufficiently low to allow comparison to the standards included in the above referenced state and federal regulations.	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal Table 5-6 Monthly GWTS Performance Analytical Results for Train 1, Q1 2021 Table 5-7 Monthly GWTS Performance Analytical Results for Train 2, Q1 2021
	All sampling, analysis, and reporting shall comply with the most recent approved Work Plans. [20.6.2.3107(A) NMAC and 20.6.2.3107(B) NMAC]	5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal

Table 5-1
DP-1839 Discharge Permit Terms and Conditions, Operations and Maintenance Plan Cross References

Condition No.	Terms and Conditions	Reference Location in Quarterly Report
21	The Permittee shall report the volume of treated GWTS effluent discharged to each UIC well each quarter. This report shall include the following:	See Below
	a. Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each UIC well	Table 5-4 Groundwater Treatment System Injection Well Performance, Q1 2021
	b. The totalized monthly volume of treated effluent transferred to all UIC wells	Table 5-2 Quantities of Groundwater Treated and Discharged, Q1 2021
	c. Monthly average, maximum, and minimum head values of injection water for each UIC well.	Table 5-4 Groundwater Treatment System Injection Well Performance, Q1 2021
	The Permittee shall monitor the GWTS effluent volume utilizing an effluent flow meter installed on the effluent pump skid after the GAC units. Each UIC well shall have a dedicated flowmeter. Flowmeters shall be inspected and calibrated in accordance with the associated manufacturer's recommendations. [20.6.2.3107 NMAC]	Table 5-4 Groundwater Treatment System Injection Well Performance, Q1 2021 Table 5-9 GWTS Routine Maintenance (Monthly Flowmeter Inspection and Annual Calibration Verification)
22	The Permittee shall include the following results and general information in quarterly reports to NMED:	See Below
	a. Any mechanical integrity (tests) conducted on either the GWTS or a UIC well	5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2021
	b. Any replacement of GAC media and the associated data that initiated the decision to replace the media	5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2021
	c. Any UIC well rehabilitation conducted	5.3.1 Routine Maintenance Activities Table 5-9 GWTS Routine Maintenance Items, Q1 2021 5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2021
	d. Any malfunction, repair, or replacement of a flowmeter	5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2021
	e. Any additional operational changes with the potential to affect the discharge. [20.6.2.3107 NMAC]	5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2021
23	The Permittee shall monitor the groundwater wells in the vicinity of KAFB-7 and in the vicinity of any newly installed UIC well(s) to determine any change to aquifer chemistry that may be the result of injection.	Not applicable in Q1 2021
	This monitoring shall be performed annually, shall conform to the procedures of the most current approved Work Plan, and shall measure the COCs listed in Table 2. This chemistry will be reported in the Annual Report for BFF.	Provided in this Q4 2019 Report; Section 5.2.1.1
	ST-105 Annual Report includes elevation contour mapping and analytical parameters identified in the Stage 2 Abatement Plan.	Reported annually in the ST-105 Annual Report
	The Permittee shall develop a groundwater elevation contour map depicting the groundwater flow direction in the vicinity of each UIC well and report it in the ST-105 Annual Report.	Reported annually in the ST-105 Annual Report Also reported in Q4 of each year, last reported in Q4 2019
	If the chemical quality of the treated groundwater being injected changes over time, NMED may require the Permittee to repeat geochemical modeling (numeric or analytical) to predict the interaction between the treated effluent and receiving groundwater. [20.6.2.3107 NMAC]	Not applicable in Q1 2021
24	The Permittee shall post all reports required by this Discharge Permit on Kirtland AFB's most current website (e.g., https://kirtlandafb.tlisolutions.com/main.aspx.) [20.6.2.3107(A) NMAC]	http://afcec.publicadmin-record.us.af.mil/search.aspx
34	In the event the Permittee proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility that differs from the terms and conditions in this Discharge Permit, the Permittee shall notify NMED prior to implementing such changes.	Noted
	The Permittee shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [20.6.2.7(P) NMAC, 20.6.2.3107(C) NMAC, 20.6.2.3109(E) and (G) NMAC]	Noted

Table 5-1
DP-1839 Discharge Permit Terms and Conditions, Operations and Maintenance Plan Cross References

Condition No.	Terms and Conditions	Reference Location in Quarterly Report
35	In the event the Permittee proposes to construct or change an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittee shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.	Noted
	In the event the Permittee implements changes to an existing system authorized by this Discharge Permit which will result in only a minor effect on the quality of the discharge, the Permittee shall report such changes (including the submission of record drawings, where applicable) in the next quarterly report to NMED. [20.6.2.1202(A) and (C) NMAC, New Mexico Statutes Annotated 1978, §§ 61-23-1 through 61-23-32]	Not applicable in Q1 2021

BFF = Bulk Fuels Facility
COC = contaminant of concern
GAC = granular activated carbon
GWTS = groundwater treatment system
GWQB = Groundwater Quality Bureau
HWB = Hazardous Waste Bureau
NMAC = New Mexico Administrative Code
NMED = New Mexico Environment Department
No. = number
O&M = operation and maintenance
Q1 = first quarter
Q2 = second quarter
Q3 = third quarter
Q4 = fourth quarter
UIC = underground injection control

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Table 5-2
Groundwater Treatment System Extraction Well Performance, Q1 2021

Well ID	Well Parameter	January	February	March	Q1 (Average)
KAFB-106228	Average Operational Flow Rate[a] (gpm)	137.7	137.3	136.3	137.1
	Flow Rate Range[b] (gpm; min-max)	136.2 - 138.3	135.8 - 139.8	135.6 - 136.9	135.6 - 139.8
	Average Drawdown[c] (ft)	17.9	17.3	17.3	17.5
	Water Level Elevation Range[b] (ft AMSL; min-max)	4857.0 - 4858.4	4857.7 - 4858.9	4857.9 - 4859.4	4857.0 - 4859.4
	Average Specific Capacity[d] (gpm/ft)	7.7	7.9	7.9	7.8
	Average Transmissivity[d] (gpd/ft)	11,518	11,878	11,862	11,749
	Run Time Percentage[e]	93.3%	87.6%	99.1%	93.3%
	Notes	NA	NA	NA	NA
KAFB-106233	Average Operational Flow Rate[a] (gpm)	158.7	160.2	160.6	160.0
	Flow Rate Range[b] (gpm; min-max)	158.3 - 159.2	158.2 - 162.0	160.3 - 162.0	158.2 - 162.0
	Average Drawdown[c] (ft)	3.5	5.5	5.1	4.7
	Water Level Elevation Range[b] (ft AMSL; min-max)	4869.2 - 4875.7	4869.6 - 4875.2	4869.5 - 4875.6	4869.2 - 4875.7
	Average Specific Capacity[d] (gpm/ft)	25.8	28.5	30.0	28.5
	Average Transmissivity[d] (gpd/ft)	38,696	42,692	45,060	42,702
	Run Time Percentage[e]	41.2%	84.6%	76.0%	67.3%
	Notes	Intermittently Online[g]	Intermittently Online[g]	Intermittently Online[g]	Intermittently Online[g]
KAFB-106234	Average Operational Flow Rate[a] (gpm)	174.3	173.9	171.3	173.1
	Flow Rate Range[b] (gpm; min-max)	173.5 - 175.7	171.6 - 175.1	170.5 - 172.8	170.5 - 175.7
	Average Drawdown[c] (ft)	4.9	4.3	6.5	5.2
	Water Level Elevation Range[b] (ft AMSL; min-max)	4869.0- 4869.7	4868.5 - 4870.5	4867.0 - 4868.3	4867.0 - 4870.5
	Average Specific Capacity[d] (gpm/ft)	35.9	40.5	26.5	34.3
	Average Transmissivity[d] (gpd/ft)	53,786	60,779	39,786	51,031
	Run Time Percentage[e]	95.1%	84.8%	99.2%	93.0%
	Notes	NA	NA	NA	NA
KAFB-106239	Average Operational Flow Rate[a] (gpm)	73.3	72.9	75.9	74.1
	Flow Rate Range[b] (gpm; min-max)	72.6 - 74.0	71.5 - 76.1	75.3 - 76.3	71.5 - 76.3
	Average Drawdown[c] (ft)	11.8	10.1	8.3	10.1
	Water Level Elevation Range[b] (ft AMSL; min-max)	4871.4 - 4872.4	4871.7 - 4883.4	4874.4 - 4875.5	4871.4 - 4883.4
	Average Specific Capacity[d] (gpm/ft)	6.3	7.1	9.1	7.5
	Average Transmissivity[d] (gpd/ft)	9,384	10,662	13,648	11,257
	Run Time Percentage[e]	93.3%	77.3%	99.1%	89.9%
	Notes	NA	NA	NA	NA
Combined Extraction Well Totals	Combined Average Operational Flow Rate[g] (gpm)	472.4	535.9	533.8	513.3
	Combined Flow Rate Range (gpm)	383.6 - 545.8	383.6 - 549.8	383.9 - 546.5	383.6 - 549.8
	Run Time Percentage[h]	95.1%	87.6%	99.2%	93.3%

Table 5-2
Groundwater Treatment System Extraction Well Performance, Q1 2021

[a] Flow rate calculation is an average rate that only includes time while the pump was operational; average values were computed from daily values throughout Q1 2021.

[b] Ranges are provided from daily values throughout Q1 2021.

[c] Average drawdown is calculated from the approximate static water elevation in Q1 2021, only includes time while the pump was operational and does not account for dynamic water elevation increases in the aquifer; average values were computed from daily values throughout Q1 that were obtained from the SCADA for all the extraction wells.

[d] Specific capacity and transmissivity average values only include pump run time (i.e., pump down time is not factored into the calculation); average values were computed from daily values throughout Q1.

[e] Percent run time is calculated when the given well is running at a minimum of 50 gpm; dataset includes readings for every minute throughout Q1.

[f] KAFB-106233 was intermittently online in January, February, and March to maintain water level at the Tijeras Arroyo Golf Course Main Pond.

[g] Combined Average Operation Flow Rate is the average influent flow rate to the GWTS.

[h] The combined extraction well percent run time is based on the percentage of time that water is entering the GWTS from any combination of extraction wells.

% = percent

AMSL = above mean sea level.

ft = foot/feet

gpd = gallon per day

gpm = gallon per minute

GWTS = groundwater treatment system

ID = identification

KAFB = Kirtland Air Force Base

max = maximum

min = minimum

NA = not applicable

Q1 = first quarter

SCADA = supervisory control and data acquisition

Table 5-3
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2021

GWTS Operating Month	Train 1 Total Groundwater Treated (gallons)	Train 2 Total Groundwater Treated (gallons)	Total Groundwater Extracted (gallons)	Treated Groundwater Injected to Injection Well KAFB-7 (gallons)	Treated Groundwater Injected to Injection Well KAFB-106IN2[a] (gallons)	Treated Groundwater Discharged to the GCMP[b] (gallons)
Totalizing Flow Meter[c]	FE/FIT-3108	FE/FIT-3208	FE/FIT-3108 + FE/FIT-3208	FE/FIT-3108 + FE/FIT-3208	KAFB-IN2 Flowmeter	FE/FIT-3108 + FE/FIT-3208
December 2015[d]	17,664,900	0	17,664,900	0	--	17,664,900
2015 Total	**17,664,900**	**0**	**17,664,900**	**0**	--	**17,664,900**
January 2016	1,777,200	0	1,777,200	0	--	1,777,200
February 2016	881,000	0	881,000	181,300	--	699,700
March 2016	22,168,080	0	22,168,080	1,231,350	--	20,936,730
April 2016	12,649,920	0	12,649,920	582,570	--	12,067,350
May 2016	12,090,000	0	12,090,000	0	--	12,090,000
June 2016	8,850,000	0	8,850,000	0	--	8,850,000
July 2016	9,940,000	0	9,940,000	0	--	9,940,000
August 2016	9,400,000	0	9,400,000	0	--	9,400,000
September 2016	12,980,000	0	12,980,000	0	--	12,980,000
October 2016	8,300,000	0	8,300,000	0	--	8,300,000
November 2016	7,200,000	0	7,200,000	2,970,000	--	4,230,000
December 2016	14,570,100	0	14,570,100	14,501,190	--	68,910
2016 Total	**120,806,300**	**0**	**120,806,300**	**19,466,410**	--	**101,339,890**
January 2017	6,089,700	87,300	6,177,000	5,877,600	--	299,400
February 2017	1,637,100	2,357,400	3,994,500	2,216,600	--	1,777,900
March 2017	5,551,200	5,705,400	11,256,600	5,172,800	--	6,083,800
April 2017	7,269,000	6,712,700	13,981,700	2,248,062	--	11,733,638
May 2017	9,234,900	9,453,700	18,688,600	4,722,563	--	13,966,037
June 2017	9,706,100	9,055,100	18,761,200	1,592,700	--	17,168,500
July 2017	13,260,800	10,875,200	24,136,000	3,023,500	--	21,112,500
August 2017	9,461,200	8,999,500	18,460,700	4,847,500	--	13,613,200
September 2017	9,734,500	9,227,600	18,962,100	6,752,400	--	12,209,700
October 2017	8,684,700	12,941,900	21,626,600	14,775,800	--	6,850,800
November 2017	0	12,513,400	12,513,400	3,734,900	--	8,778,500
December 2017	0	13,304,300	13,304,300	10,724,700	--	2,579,600
2017 Total	**80,629,200**	**101,233,500**	**181,862,700**	**65,689,125**	--	**116,173,575**

Table 5-3
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2021

GWTS Operating Month	Train 1 Total Groundwater Treated (gallons)	Train 2 Total Groundwater Treated (gallons)	Total Groundwater Extracted (gallons)	Treated Groundwater Injected to Injection Well KAFB-7 (gallons)	Treated Groundwater Injected to Injection Well KAFB-106IN2[a] (gallons)	Treated Groundwater Discharged to the GCMP[b] (gallons)
January 2018	9,865,000	5,497,700	15,362,700	13,887,700	--	1,475,000
February 2018	10,785,300	6,786,100	17,571,400	13,765,300	--	3,806,100
March 2018	11,006,000	7,092,900	18,098,900	9,235,300	--	8,863,600
April 2018	7,468,200	5,800,700	13,268,900	0[e]	--	13,268,900
May 2018	11,238,400	8,061,600	19,300,000	0[e]	--	19,300,000
June 2018	14,746,800	10,186,400	24,933,200	0[e]	--	24,933,200
July 2018	12,038,500	7,901,100	19,939,600	0[e]	--	19,939,600
August 2018	14,973,100	9,583,900	24,557,000	0[e]	--	24,557,000
September 2018	9,516,900	7,509,600	17,026,500	0[e]	--	17,026,500
October 2018	1,572,600	7,288,500	8,861,100	0[e]	--	8,861,100
November 2018	7,788,300	4,682,900	12,471,200	7,517,100	--	4,954,100
December 2018	15,521,500	10,282,100	25,803,600	23,080,800	--	2,722,800
2018 Total	**126,520,600**	**90,673,500**	**217,194,100**	**67,486,200**	--	**149,707,900**
January 2019	10,768,450	9,747,250	21,536,900	19,494,500	--	2,042,400
February 2019	6,949,200	8,342,400	15,291,600	13,624,600	--	7,640,500
March 2019	9,046,600	10,172,500	19,219,100	13,435,900	--	13,080,600
April 2019	7,164,400	8,618,600	15,783,000	7,170,800	--	14,031,100
May 2019	12,933,100	10,866,200	23,799,300	5,779,900	--	17,091,400
June 2019	12,585,900	7,964,600	20,550,500	1,512,500	--	15,855,000
July 2019	12,281,000	4,909,900	17,190,900	551,100	--	17,351,400
August 2019	16,276,400	10,668,100	26,944,500	5,494,800	--	22,177,400
September 2019	12,823,300	8,452,900	21,276,200	2,916,700	--	17,279,700
October 2019	15,250,400	9,773,900	25,024,300	17,177,900	--	6,326,400
November 2019	12,505,600	8,260,300	20,765,900	14,525,700	--	1,081,700
December 2019	13,113,700	8,016,000	21,129,700	15,695,800	--	134,000
2019 Total	**141,698,050**	**105,792,650**	**247,490,700**	**117,380,200**	--	**134,091,600**

Table 5-3
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2021

GWTS Operating Month	Train 1 Total Groundwater Treated (gallons)	Train 2 Total Groundwater Treated (gallons)	Total Groundwater Extracted (gallons)	Treated Groundwater Injected to Injection Well KAFB-7 (gallons)	Treated Groundwater Injected to Injection Well KAFB-106IN2[a] (gallons)	Treated Groundwater Discharged to the GCMP[b] (gallons)
January 2020	9,025,600	10,401,500	19,427,100	18,919,600	--	507,500
February 2020	6,985,200	8,249,600	15,234,800	12,237,600	--	2,997,200
March 2020	7,280,800	8,168,800	15,449,600	4,246,900	--	11,202,700
April 2020	9,547,500	10,804,400	20,351,900	5,110,300	--	15,241,600
May 2020	10,550,000	8,680,400	19,230,400	395,600	--	18,834,800
June 2020	12,585,900	7,964,600	20,550,500	0	--	20,550,500
July 2020	15,683,800	7,048,500	22,732,300	1,550,800	--	21,181,500
August 2020	12,873,600	8,529,500	21,403,100	3,737,000	--	17,666,100
September 2020	12,823,300	8,452,900	21,276,200	4,711,800	--	16,564,400
October 2020	15,250,400	9,773,900	25,024,300	14,033,400	--	10,990,900
November 2020	12,505,600	8,260,300	20,765,900	11,704,300	83,100	8,978,500
December 2020	16,478,900	10,121,600	26,600,500	23,482,400	57,600	3,060,500
2020 Total	**141,590,600**	**106,456,000**	**248,046,600**	**100,129,700**	**140,700**	**147,776,200**
January 2021	12,203,700	4,799,200	17,002,900	15,148,600	0	1,854,300
February 2021	11,610,900	6,821,600	18,432,500	15,949,500	147,700	2,335,300
March 2021	13,525,300	6,642,500	20,167,800	4,352,000	4,664,600	11,151,200
Q1 2021 Total	**37,339,900**	**18,263,300**	**55,603,200**	**35,450,100**	**4,812,300**	**15,340,800**
2021 Total[f]	**37,339,900**	**18,263,300**	**55,603,200**	**35,450,100**	**4,812,300**	**15,340,800**
Cumulative Total	**666,249,550**	**422,418,950**	**1,088,668,500**	**405,601,735**	**4,953,000**	**682,094,865**

[a] Injection well KAFB-106IN2 became active on November 13, 2020.

[b] Corrected volumes from human machine interface datasets.

[c] Flow meters are inspected monthly, see Appendix I-1.

[d] Train 1 treatment volume for December 2015 includes all water treated by the temporary treatment system and water treated by Train 1 during December 2015.

[e] On March 14, 2018 at 0206, the KAFB-7 V-Smart valve hydraulic assembly failed downhole. Repairs to KAFB-7 were completed on November 14, 2018. All treated water between March 14, 2018 and November 15, 2018 was discharged to the GCMP.

[f] Cumulative 2021 treated volume calculated through March 29, 2021.

FE/FIT-3208 = Flow meter/flow meter transmitter (followed by the component designation)

GCMP = Tijeras Arroyo Golf Course Main Pond

GWTS = groundwater treatment system

Q1 = first quarter

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Table 5-4
Groundwater Treatment System Injection Well Performance, Q1 2021

Well ID	Well Parameter	January	February	March	Q1 (average)
KAFB-7	Average Operational Flow Rate[a] (gpm)	554.1	599.3	496.1	561.4
	Flow Rate Range[b] (gpm; min-max)	279.9 - 682.8	402.5 - 753.2	365.6 - 596.5	0.0 - 753.2
	Volume Injected[c] (gal)	15,148,600	15,949,500	4,352,000	11,816,700
	Average Water Level Elevation[d] (ft AMSL)	4904.8	4910.5	4,888.5	4900.9
	Water Level Elevation Range[d] (ft AMSL; min-max)	4883.3 - 4946.6	4883.3 - 4940.5	4883.1 - 4922.7	4883.1 - 4946.6
	Run Time %[e]	87.5%	74.7%	20.1%	60.8%
	Notes	NA	NA	NA	NA
KAFB-106IN2	Average Operational Flow Rate[a] (gpm)	0.0	557.8	557.8	537.3
	Flow Rate Range[b] (gpm; min-max)	0.0 - 0.0	15.4 - 588.5	552.6 - 581.5	0.0 - 588.5
	Volume Injected[c] (gal)	0	147,700	4,664,600	1,604,100
	Average Water Level Elevation[d] (ft AMSL)	4878.8	4862.3	4892.9	4884.5
	Water Level Elevation Range[d] (ft AMSL; min-max)	4862.3 - 4879.5	4862.3 - 4862.3	4862.3 - 4944.5	4862.3 - 4944.5
	Run Time %[e]	0.0%	0.7%	28.7%	9.8%
	Notes	Offline[f]	Intermittently Online[f]	Intermittently Online[f]	NA

Table 5-4
Groundwater Treatment System Injection Well Performance, Q1 2021

Well ID	Well Parameter	January	February	March	Q1 (average)
GWTS Effluent	Average Operational Flow Rate[a] (gpm)	521.4	605.9	543.5	555.3
	Flow Rate Range[b] (gpm; min-max)	259.6 - 642.4	379.1 - 660.0	360.1 - 640.0	259.6 - 660.0

[a] Flow rate calculation is an average rate that only includes time while the system was operational; average values were computed from SCADA values throughout Q1 2021.

[b] Ranges are provided from SCADA values throughout Q1 2021. KAFB-7 flow rate fluctuates due to surging, etc. and is not consistent with GWTS effluent flow rates.

[c] Volume injected is calculated using totalizer readings from flow meters installed on the GWTS effluent skids. March injection volume calculated through March 29, 2021.

[d] Water level elevation averages and ranges include times when injection wells are not being utilized and data was collected from the SCADA for

[e] Percent run time is calculated when the given well is running at a minimum of 50 gpm; dataset includes readings for every minute throughout Q1.

[f] Injection well KAFB-IN2 became active on November 13, 2020. The well was redeveloped in February 2021.

% = percent
AMSL = above mean sea level
ft = foot/feet
gal = gallon(s)
gpm = gallons per minute
GWTS = groundwater treatment system
ID = identification
KAFB = Kirtland Air Force Base
max = maximum
min = minimum
NA = not applicable
SCADA = supervisory control and data acquisition
Q1 = first quarter

Table 5-5
Groundwater Treatment System 1,2-Dibromoethane Removal, Q1 2021

Treatment Train	Month	Date[a]	Cumulative Volume Extracted (gal)	Monthly Volume Treated (gal)	Influent EDB Concentration (µg/L)[b]	Cumulative Mass of EDB Extracted (mg)	Mass of EDB Removed (mg)[c]
Train 1	January	1/4/2021	630,941,900	12,203,700	ND < 0.019	82,023	0
		1/11/2021	633,561,400		ND < 0.019	82,023	
		1/18/2021	636,210,500		ND < 0.019	82,023	
		1/25/2021	639,842,700		ND < 0.019	82,023	
		2/1/2021	643,145,600		ND < 0.019	82,023	
	February	2/8/2021	646,062,400	11,610,900	ND < 0.019	82,023	0
		2/15/2021	648,817,800		ND < 0.019	82,023	
		2/22/2021	651,635,700		ND < 0.019	82,023	
		3/1/2021	654,756,500		ND < 0.019	82,023	
	March	3/8/2021	658,217,500	13,525,300	ND < 0.019	82,023	0
		3/15/2021	661,706,300		ND < 0.019	82,023	
		3/22/2021	665,016,600		ND < 0.019	82,023	
		3/29/2021	668,281,800		ND < 0.019	82,023	
Train 2	January	1/4/2021	406,104,500	4,799,200	0.018	51,838	316
		1/11/2021	408,118,700		0.018	51,975	
		1/18/2021	410,156,900		0.017	52,107	
		1/25/2021	410,903,700		0.017	52,155	
		2/1/2021	410,903,700		0.017	52,155	
	February	2/8/2021	412,513,400	6,821,600	0.014	52,240	362
		2/15/2021	414,212,600		0.014	52,330	
		2/22/2021	415,944,800		0.014	52,422	
		3/1/2021	417,725,300		0.014	52,516	
	March	3/8/2021	418,940,500	6,642,500	0.014	52,580	352
		3/15/2021	420,231,300		0.014	52,649	
		3/22/2021	422,297,700		0.014	52,758	
		3/29/2021	424,367,800		ND < 0.019	52,868	
Q1 2021 Train 1 Total				37,339,900			0
Q1 2021 Train 2 Total				18,263,300			1,030
Q1 2021 Total				55,603,200			1,030

Table 5-5
Groundwater Treatment System 1,2-Dibromoethane Removal, Q1 2021

[a] Monthly date ranges may include dates falling outside of the actual month as weekly human machine interface data retrievals occur every Monday.

[b] The analytical result from the most recent monthly sample is used for the influent EDB concentration (Tables 4-6 and 4-7). Where EDB is non-detect, a concentration of 0 is used for the purpose of mass calculation and is displayed in this table as ND < [LOD].

[c] The mass of EDB removed is the sum of the weekly mass of EDB removed, which is the influent EDB concentration multiplied by the weekly treated volume, which is calculated each Monday from the difference in effluent totalizer readings since the previous Monday.

< = less than
µg/L = microgram per liter
EDB = 1,2-dibromomethane (ethylene dibromide)
gal = gallon(s)
LOD = limit of detection
mg = milligram
ND = non-detect
Q1 = first quarter

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Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2021

		Well Location ID:					GWTS-BFF-INF1			GWTS-BFF-GAC1			GWTS-BFF-EFF1			GWTS-BFF-EFF1		
		Field Sample ID:					GWTS-INF1-011221			GWTS-GAC1-011221			GWTS-EFF1-011221			GWTS-EFF1DUP-011221		
		Sample Date:					1/12/2021			1/12/2021			1/12/2021			1/12/2021		
		Sample Type:					REG			REG			REG			Field Duplicate		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.7			19.7			19.6			19.6		
		Spec Cond (µS/cm)	NA	NA	NA	NA	590			591			584			584		
		pH (S.U.)	NA	NA	NA	NA	7.78			7.53			7.48			7.48		
		ORP (mV)	NA	NA	NA	NA	255.7			314.3			345.2			345.2		
		DO (mg/L)	NA	NA	NA	NA	6.66			3.77			7.07			7.07		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2021

			Well Location ID:				GWTS-BFF-INF1			GWTS-BFF-GAC1			GWTS-BFF-EFF1			GWTS-BFF-INF1		
			Field Sample ID:				GWTS-INF1-020521			GWTS-GAC1-020521			GWTS-EFF1-020521			GWTS-INF1-032421		
			Sample Date:				2/5/2021			2/5/2021			2/5/2021			3/24/2021		
			Sample Type:				REG			REG			REG			REG		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	ND	U	0.02	ND	U	0.019	ND	U	0.02	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.6			19.3			19.6			19.5		
		Spec Cond (µS/cm)	NA	NA	NA	NA	366.2			477.2			477.1			475.7		
		pH (S.U.)	NA	NA	NA	NA	7.78			7.55			7.45			7.72		
		ORP (mV)	NA	NA	NA	NA	87.8			114.7			258.8			90.1		
		DO (mg/L)	NA	NA	NA	NA	6.27			4.51			5.49			6.65		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2021

						Well Location ID:	GWTS-BFF-GAC1			GWTS-BFF-EFF1			GWTS-BFF-EFF1		
						Field Sample ID:	GWTS-GAC1-032421			GWTS-EFF1-032421			GWTS-EFF1DUP-032421		
						Sample Date:	3/24/2021			3/24/2021			3/24/2021		
						Sample Type:	REG			REG			Field Duplicate		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.4			19.6			19.6		
		Spec Cond (µS/cm)	NA	NA	NA	NA	474.2			471.8			471.8		
		pH (S.U.)	NA	NA	NA	NA	7.41			7.28			7.28		
		ORP (mV)	NA	NA	NA	NA	71			157.4			157.4		
		DO (mg/L)	NA	NA	NA	NA	4.31			5.47			5.47		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2021

[a] NM WQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC, 2018).

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2018).

[c] EPA Region 6 RSL for Tapwater (November 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard. or (2) EPA MCL. If no NM WQCC numeric standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

µg/L = microgram per liter
µS/cm = microSiemens per centimeter
-- = Validation qualifier not assigned.
ºC = degree Celsius
AFB = Air Force Base
BTEX = Benzene, toluene, ethylbenzene, and total xylenes
DO = dissolved oxygen
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
NA = not applicable
ND = nondetect
NM = New Mexico
NMAC = New Mexico Administrative Code
ORP = oxidation reduction potential
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Spec Cond = specific conductivity
S.U. = standard unit
U = Qualifier denotes the analyte was analyzed but not detected above the LOD.
Val Qual = validation qualifier
Val Quals based on independent data validation:
WQCC = Water Quality Control Commission

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2021

						Well Location ID:	GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2		
						Field Sample ID:	GWTS-INF2-011221			GWTS-GAC2-011221			GWTS-EFF2-011221		
						Sample Date:	1/12/2021			1/12/2021			1/12/2021		
						Sample Type:	REG			REG			REG		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	0.017	J	0.019	ND	UJ	0.019	ND	UJ	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.025	--	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.9			19.9			19.9		
		Spec Cond (µS/cm)	NA	NA	NA	NA	431.7			453.8			449.3		
		pH (S.U.)	NA	NA	NA	NA	7.7			7.36			7.32		
		ORP (mV)	NA	NA	NA	NA	154.2			171.9			157.9		
		DO (mg/L)	NA	NA	NA	NA	6.11			0.87			5.07		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2021

						Well Location ID:	GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2		
						Field Sample ID:	GWTS-INF2-020521			GWTS-GAC2-020521			GWTS-EFF2-020521		
						Sample Date:	2/5/2021			2/5/2021			2/5/2021		
						Sample Type:	REG			REG			REG		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	0.014	J	0.02	ND	U	0.02	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.0039	J	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.7			19.7			19.7		
		Spec Cond (µS/cm)	NA	NA	NA	NA	363.6			365.3			366.2		
		pH (S.U.)	NA	NA	NA	NA	7.74			7.47			7.41		
		ORP (mV)	NA	NA	NA	NA	90.2			53.2			25.1		
		DO (mg/L)	NA	NA	NA	NA	5.65			1.14			4.55		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2021

			Well Location ID:				GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2		
			Field Sample ID:				GWTS-EFF2DUP-020521			GWTS-INF2-032421			GWTS-GAC2-032421			GWTS-EFF2-032421		
			Sample Date:				2/5/2021			3/24/2021			3/24/2021			3/24/2021		
			Sample Type:				Field Duplicate			REG			REG			REG		
Parameter	**Analytical Method (units)**	**Analyte**	**NMAC NM WQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	0.028	--	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NA	NA	NA	NA	19.7			20			19.5			19.5		
		Spec Cond (µS/cm)	NA	NA	NA	NA	366.2			366.2			362.8			362.1		
		pH (S.U.)	NA	NA	NA	NA	7.41			7.66			7.34			7.5		
		ORP (mV)	NA	NA	NA	NA	25.1			117.7			85			78		
		DO (mg/L)	NA	NA	NA	NA	4.55			6.06			0.74			4.4		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2021

[a] NM WQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC, 2018).

[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2018).

[c] EPA Region 6 RSL for Tapwater (November 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC numeric standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

-- = Validation qualifier not assigned.
µg/L = microgram per liter
µS/cm = microSiemens per centimeter
ºC = degree Celsius
AFB = Air Force Base
DO = dissolved oxygen
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
NA = not applicable
ND = nondetect
NM = New Mexico
NMAC = New Mexico Administrative Code
ORP = oxidation reduction potential
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Spec Cond = specific conductivity
S.U. = standard unit
Val Qual = validation qualifier
WQCC = Water Quality Control Commission
Shading = analyte was detected.
Val Quals based on independent data validation:
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above the LOD.

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2		
			Field Sample ID:		GWTS-INF2-030321			GWTS-GAC2-030321			GWTS-EFF2-030321			GWTS-INF2-030421			GWTS-GAC2-030421		
			Sample Date:		3/3/2021			3/3/2021			3/3/2021			3/4/2021			3/4/2021		
			Sample Type:		REG			REG			REG			REG			REG		
			Sample Period:		Day 1 of 7			Day 1 of 7			Day 1 of 7			Day 2 of 7			Day 2 of 7		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	0.032	--	0.0052	ND	U	0.0052	ND	U	0.0052	0.035	--	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.9			19.7			19.5			19.8			19.5		
		Spec Cond (µS/cm)	NS	NS	763.0			1073.0			1594.0			765.0			758.0		
		pH (S.U.)	NS	NS	7.73			7.22			9.23			7.89			7.57		
		ORP (mV)	NS	NS	112.9			168.6			181.0			219.7			253.1		
		DO (mg/L)	NS	NS	5.72			0.51			5.13			4.97			2.66		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-EFF2		
			Field Sample ID:		GWTS-EFF2-030421			GWTS-INF2-030521			GWTS-GAC2-030521			GWTS-EFF2-030521			GWTS-EFF2DUP-030521		
			Sample Date:		3/4/2021			3/5/2021			3/5/2021			3/5/2021			3/5/2021		
			Sample Type:		REG			REG			REG			REG			Field Duplicate		
			Sample Period:		Day 2 of 7			Day 3 of 7			Day 3 of 7			Day 3 of 7			Day 3 of 7		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	0.018	J	0.019	ND	U	0.019	ND	U	0.02	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	0.0054	J	0.0052	0.031	--	0.0052	ND	U	0.0052	0.0081	J	0.0052	0.0081	J	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.7			19.6			19.2			19.6			19.6		
		Spec Cond (µS/cm)	NS	NS	836.0			832.0			824.0			862.0			862.0		
		pH (S.U.)	NS	NS	8.88			7.77			7.60			8.28			8.28		
		ORP (mV)	NS	NS	245.0			292.2			310.0			325.5			325.5		
		DO (mg/L)	NS	NS	4.79			4.69			2.57			4.2			4.2		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2		
			Field Sample ID:		GWTS-INF2-030621			GWTS-GAC2-030621			GWTS-EFF2-030621			GWTS-INF2-030721			GWTS-GAC2-030721		
			Sample Date:		3/6/2021			3/6/2021			3/6/2021			3/7/2021			3/7/2021		
			Sample Type:		REG			REG			REG			REG			REG		
			Sample Period:		Day 4 of 7			Day 4 of 7			Day 4 of 7			Day 5 of 7			Day 5 of 7		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	0.015	J	0.019	ND	U	0.019	ND	U	0.019	0.014	J	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	0.036	--	0.0052	ND	U	0.0052	0.0091	J	0.0052	0.037	--	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.6			19			19.5			19.5			19.7		
		Spec Cond (µS/cm)	NS	NS	813.0			858.0			913.0			831.0			834.0		
		pH (S.U.)	NS	NS	7.89			7.73			8.41			7.77			7.72		
		ORP (mV)	NS	NS	268.0			303.7			298.3			273.3			283.1		
		DO (mg/L)	NS	NS	5.39			2.18			4.2			5.31			2.06		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2		
			Field Sample ID:		GWTS-EFF2-030721			GWTS-INF2-030821			GWTS-GAC2-030821			GWTS-EFF2-030821			GWTS-INF2-030921		
			Sample Date:		3/7/2021			3/8/2021			3/8/2021			3/8/2021			3/9/2021		
			Sample Type:		REG			REG			REG			REG			REG		
			Sample Period:		Day 5 of 7			Day 6 of 7			Day 6 of 7			Day 6 of 7			Day 7 of 7		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	0.018	J	0.019	ND	U	0.019	ND	U	0.019	0.018	J	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	0.0061	J	0.0052	0.038	--	0.0052	ND	U	0.0052	0.005	J	0.0052	0.036	--	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.7			19.9			19.7			19.8			19.9		
		Spec Cond (µS/cm)	NS	NS	859.0			832.0			833.0			851.0			422.2		
		pH (S.U.)	NS	NS	8.17			7.74			7.62			8.00			7.73		
		ORP (mV)	NS	NS	275.1			191.6			178.0			126.8			220.4		
		DO (mg/L)	NS	NS	4.21			4.39			1.88			3.65			5.02		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2		
			Field Sample ID:		GWTS-GAC2-030921			GWTS-EFF2-030921			GWTS-INF2-031021			GWTS-GAC2-031021			GWTS-EFF2-031021		
			Sample Date:		3/9/2021			3/9/2021			3/10/2021			3/10/2021			3/10/2021		
			Sample Type:		REG			REG			REG			REG			REG		
			Sample Period:		Day 7 of 7			Day 7 of 7			Week 1 of 4			Week 1 of 4			Week 1 of 4		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.02	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	ND	U	0.0052	0.0059	J	0.0052	0.037	--	0.0052	ND	U	0.0052	0.0044	J	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.7			19.8			19.6			19.6			19.6		
		Spec Cond (µS/cm)	NS	NS	416.9			447.6			423.3			415.2			450.1		
		pH (S.U.)	NS	NS	7.43			7.95			7.75			7.45			7.85		
		ORP (mV)	NS	NS	233.9			228.7			220.4			231.2			231.1		
		DO (mg/L)	NS	NS	1.58			4.55			5.03			1.29			4.56		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-EFF2			GWTS-BFF-INF2		
			Field Sample ID:		GWTS-INF2-031721			GWTS-GAC2-031721			GWTS-EFF2-031721			GWTS-EFF2DUP-031721			GWTS-INF2-032421		
			Sample Date:		3/17/2021			3/17/2021			3/17/2021			3/17/2021			3/24/2021		
			Sample Type:		REG			REG			REG			Field Duplicate			REG		
			Sample Period:		Week 2 of 4			Week 2 of 4			Week 2 of 4			Week 2 of 4			Week 3 of 4		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	0.035	--	0.0052	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	0.028	--	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.9			19.9			19.8			19.8			20		
		Spec Cond (µS/cm)	NS	NS	365.7			364.5			372.3			372.3			366.2		
		pH (S.U.)	NS	NS	7.69			7.38			7.54			7.54			7.66		
		ORP (mV)	NS	NS	61.7			-18.3			66.9			66.9			117.7		
		DO (mg/L)	NS	NS	4.54			0.36			3.36			3.36			6.06		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

			Location ID:		GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2		
			Field Sample ID:		GWTS-GAC2-032421			GWTS-EFF2-032421			GWTS-INF2-033121			GWTS-GAC2-033121			GWTS-EFF2-033121		
			Sample Date:		3/24/2021			3/24/2021			3/31/2021			3/31/2021			3/31/2021		
			Sample Type:		REG			REG			REG			REG			REG		
			Sample Period:		Week 3 of 4			Week 3 of 4			Week 4 of 4			Week 4 of 4			Week 4 of 4		
Parameter	**Analytical Method**	**Analyte**	**NMAC NM WQCC[a]**	**Project Screening Level[b]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method SW8011 (µg/L)	1,2-Dibromoethane	0.1	0.05	ND	U	0.019	ND	U	0.019	ND	UJ	0.019	ND	UJ	0.019	ND	UJ	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	620	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8	ND	U	2.8
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	1.0	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	0.2	ND	U	0.0052	ND	U	0.0052	0.024	--	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	19.5			19.5			19.9			20			20		
		Spec Cond (µS/cm)	NS	NS	362.8			362.1			683			615			684		
		pH (S.U.)	NS	NS	7.34			7.50			7.48			7.17			7.28		
		ORP (mV)	NS	NS	85.0			78.0			99.8			71.2			76.4		
		DO (mg/L)	NS	NS	0.74			4.4			5.52			0.7			3.81		

Table 5-8
Groundwater Treatment System Granular Activated Carbon Changeout Analytical Results for Train 2, Q1 2021

[a] NM WQCC numeric standards per the New Mexico Administrative Code Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC, 2018).

[b] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NM WQCC numeric standard or (2) EPA MCL. If no NM WQCC numeric standard or MCL exists for any analyte, then the project screening level is the EPA RSL.

µg/L = microgram per liter
µS/cm = microSiemens per centimeter
-- = Validation qualifier not assigned.
ºC = degree Celsius
BFF = Bulk Fuels Facility
EDB = 1,2-dibromoethane (ethylene dibromide)
EFF = effluent
EPA = U.S. Environmental Protection Agency
ft = foot/feet
GAC = granular activated carbon
GWTS = groundwater treatment system
ID = identification
INF = influent
LOD = limit of detection
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = nondetect
NM = New Mexico
NMAC = New Mexico Administrative Code
Q1 = first quarter
ORP = oxidation reduction potential
REG = normal field sample
RSL = regional screening level
Spec Cond = specific conductivity
S.U. = standard unit
Val Qual = validation qualifier
VOC = volatile organic compound
WQCC = Water Quality Control Commission
Shading = detected concentrations above the LOD.
Bold/Shading = reported concentration exceeds the project screening level.
Val Quals based on independent data validation.
J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.
U = Qualifier denotes the analyte was analyzed but not detected above LOD.

Table 5-9
Groundwater Treatment System Routine Maintenance Schedule, Q1 2021

	Frequency			
Maintenance Activity	**Daily**	**Weekly**	**Monthly**	**As Needed**
Recording and inspecting influent, GAC vessel, and effluent skid pressure, flow rate, and totalizer readings from their respective gauges and the human machine interface	X			
Recording extraction well pressure, flow rate, and totalizer readings from the human machine interface	X			
Recording extraction well pressure, flow rate, and totalizer readings from the gauges at the well vaults		X		
Inspecting well control house and recording well control house pressure, flow rate, and totalizer readings		X		
Recording totalizer reading at KAFB-7		X		
Running and inspecting the GWTS air compressor		X		
Inspecting extraction well, conveyance line, and air release valve vaults			X	
Inspecting wellhead and associated equipment of injection well KAFB-7			X	
Inspecting and performing maintenance of flowmeters throughout the system			X	
Inspecting and performing maintenance on actuating valves throughout the system			X	
Performing confined space entries			X	
Gauging extraction well filter pack			X	
Testing of uninterruptible power supplies			X	
Semiannual inspections and maintenance of Tijeras Arroyo Golf Course ponds				X
Logging lockout-tagout entries				X
Logging system shutdowns				X
Emptying stormwater runoff flooded vaults				X
Performing air compressor maintenance				X
Cleaning GWTS sumps				X
Draining air release valve containment vessels				X
Grounds keeping including vegetation control				X
Inspecting and cleaning the GWTS Wye-strainer/basket strainer				X
Performing flow meter calibration				X[a]
Greasing pump bearings				X[b]
Changing process pump oil				X[b]
Changing air filter on control room air conditioner				X[b]
Changing bag filters				X[c]
Changing out GAC				X[d]
Disinfection of extraction wells and conveyance lines				X[e]
Testing of alarms and interlocks				X[f]
Cleaning coils and replacing air filter for the Well Control House air conditioner				X[g]
GAC skimming of the lead GAC vessel				X[h]

Table 5-9
Groundwater Treatment System Routine Maintenance Schedule, Q1 2021

[a] Flowmeters are calibrated at a minimum of once per year, but may be calibrated more often as needed.

[b] Changing of process pump oil, greasing pump bearings, and replacing the air filter in the air conditioning unit are required every 3 months, but may be changed more often as needed.

[c] Bag filters are scheduled for change out when the pressure differential across a bag filter vessel exceeds 4 psi

[d] GAC is scheduled for change out when any regulated constituent leaving the lead GAC vessel reaches 90% of the discharge limit.

[e] Disinfection of extraction wells and conveyance lines occurs on an as needed basis.

[f] Testing of alarms and interlocks occurs semi-annually or more often as needed.

[g] Cleaning of the coil and replacing of the air filter are scheduled as quarterly activities, but frequency may be adjusted as necessary.

[h] GAC skimming is performed when the differential pressure in the lead GAC vessel has increased from the operational differential pressure by at least 7 psi.

GAC = granular activated carbon
GWTS = groundwater treatment system
psi = pound per square inch
Q1 = first quarter

Table 5-10
Groundwater Treatment System Non-Routine Maintenance Items, Q1 2021

Date	Extent of Shutdown	Approximate Downtime (hours)	Cause of Shutdown
1/7/2021	GWTS	4.28	Train 2 influent tank cleaning
1/11/2021	GWTS	3.35	Installation of electrical meter at the automated changeover valves
1/12/2021	GWTS	0.78	KAFB-7 water level gauging
1/29/2021	GWTS	2.70	Redevelopment of well injection KAFB-106IN2
1/30/2021	GWTS	9.00	Redevelopment of well injection KAFB-106IN2
1/31/2021	GWTS	11.15	Redevelopment of well injection KAFB-106IN2
2/1/2021	GWTS	9.83	Redevelopment of well injection KAFB-106IN2
2/2/2021	GWTS	10.23	Redevelopment of well injection KAFB-106IN2
2/3/2021	GWTS	4.00	Redevelopment of well injection KAFB-106IN2
2/10/2021	GWTS	2.18	Redevelopment of well injection KAFB-106IN2
2/11/2021	GWTS	10.48	Redevelopment of well injection KAFB-106IN2
2/12/2021	GWTS	9.27	Redevelopment of well injection KAFB-106IN2
2/13/2021	GWTS	8.32	Redevelopment of well injection KAFB-106IN2
2/15/2021	GWTS	4.88	Redevelopment of well injection KAFB-106IN2
2/17/2021	GWTS	8.43	Redevelopment of well injection KAFB-106IN2
2/18/2021	GWTS	7.00	Redevelopment of well injection KAFB-106IN2
2/19/2021	GWTS	2.08	Redevelopment of well injection KAFB-106IN2
2/20/2021	GWTS	4.15	Redevelopment of well injection KAFB-106IN2
2/23/2021	KAFFB-106239	Not applicable	Disinfection/Rehabilitaiton of KAFB-106239
2/26/2021	GWTS	1.22	Redevelopment of injection well KAFB-106IN2 and Train 1 influent basket strainers plugged and caused a high level alarm in the Train 1 influent tank
3/2/2021	Train 2	Not applicable	Train 2 GAC changeout
3/18/2021	GWTS	0.30	Adjustment of the program for KAFB-106106IN2 injection well
1/1/2021 - 3/31/2021	KAFB-106233	Not applicable	KAFB-106233 intermittently turned offline to maintain injection well KAFB-7 water level during injection
1/20/2021 - 2/2/2021	Train 2	Not applicable	Water level transducer failure in the Train 2 effluent tank; The transducer was replaced while the system was offline during KAFB-106106IN2 redevelopment.

GWTS = groundwater treatment system
KAFB = Kirtland Air Force Base
Q1 = first quarter

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- G-3 Groundwater Treatment System Performance Sample Collection Logs
- G-4 Data Quality Evaluation Report – Groundwater Treatment System Samples
- G-5 Data Packages – Groundwater Treatment System Samples
- G-6 Groundwater Treatment System Performance Analytical Data

H Waste Disposal Documentation

H-1 Non-Hazardous Liquid Investigation-Derived Waste Profiling and Disposal Documentation
H-2 Non-Hazardous Solid Investigation-Derived Waste Profiling and Disposal Documentation
H-3 Hazardous Investigation-Derived Waste Profiling and Disposal Documentation

Appendix A-1

Regulatory Correspondence

(January-March 2021)

DEPARTMENT OF THE AIR FORCE
377TH AIR BASE WING (AFGSC)

7 February 2021

Colonel David S. Miller, USAF
Commander
377th Air Base Wing
2000 Wyoming Blvd SE
Kirtland AFB NM 87117

Mr. Kevin M. Pierard
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe NM 87505-6303

Dear Mr. Pierard

This letter is in response to the New Mexico Environment Department (NMED) letter and the associated response date for *Groundwater Monitoring Work Plan, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, New Mexico,* dated October 2, 2020.

The Air Force respectfully requests a 60-day extension for the submittal of the Groundwater Monitoring Work Plan from February 26, 2021 to April 27, 2021. Additional time is requested to ensure the document meets the requirements established in the October 2, 2020 letter and Part 6.2.4.2 of the Kirtland Air Force Base Resource Conservation and Recovery Act Permit (No. NM9570024423). Upon NMED concurrence, the additional time will allow for preparation, Command approval, and submission of the work plan.

If you have any questions or concerns, please contact Mr. Sheen Kottkamp at commercial line (505) 846-7674 or email sheen.kottkamp.1@us.af.mil.

Sincerely

DAVID S. MILLER, Colonel, USAF
Commander

cc:
NMED Resource Protection Division (Stringer), letter and CD
NMED HWB (Pierard, Andress), letter and CD
NMED GWQB (Hunter), letter and CD
SAF-IEE (Lynnes), electronic only
AFCEC/CZ (Clark, Kottkamp, Segura, Wortman, Banks), electronic only
USACE-ABQ District Office (Moayyad, Phaneuf, Dreeland, Cordova, Lovato), electronic only
Public Info Repository, Administrative Record/Information Repository (AR/IR) and File

FedEx

TRACK ANOTHER SHIPMENT

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ADD NICKNAME

Delivered
Tuesday, February 9, 2021 at 10:35 am

DELIVERED

Signed for by: A.CROSS

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

Direct signature required

FROM	TO
Albuquerque, NM US	SANTA FE, NM US

Shipment Facts

TRACKING NUMBER 772855145829	**SERVICE** FedEx Standard Overnight	**WEIGHT** 0.5 lbs / 0.23 kgs
DELIVERED TO Guard/Security Station	**TOTAL PIECES** 1	**TOTAL SHIPMENT WEIGHT** 0.5 lbs / 0.23 kgs
TERMS Shipper	**PURCHASE ORDER NUMBER** 60-day extension request	**SHIPPER REFERENCE** 6360401 2002 0100000
PACKAGING FedEx Envelope	**SPECIAL HANDLING SECTION** Deliver Weekday, Direct Signature Required	**SHIP DATE** 2/8/21
SIGNATURE SERVICES Direct signature required	**STANDARD TRANSIT** 2/9/21 by 4:30 pm	**ACTUAL DELIVERY** 2/9/21 at 10:35 am

Travel History

TIME ZONE
Local Scan Time

Tuesday, February 9, 2021

10:35 AM	SANTA FE, NM	Delivered

9:30 AM	SANTA FE, NM	On FedEx vehicle for delivery
8:39 AM	SANTA FE, NM	At local FedEx facility

Monday, February 8, 2021

11:07 PM	MEMPHIS, TN	Arrived at FedEx location
8:21 PM	ALBUQUERQUE, NM	At local FedEx facility
7:22 PM	ALBUQUERQUE, NM	At destination sort facility
7:06 PM	ALBUQUERQUE, NM	Left FedEx origin facility
5:02 PM	ALBUQUERQUE, NM	Picked up
4:58 PM		Shipment information sent to FedEx

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 16, 2021

Colonel David S. Miller
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117

Lt. Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil Engineer Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117

RE: APPROVAL
EXTENSION REQUEST- BULK FUELS FACILITY SPILL
GROUNDWATER MONITORING WORK PLAN
BULK FUELS FACILITY SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO
EPA ID# NM6213820974
HWB-KAFB-BFFS-MISC

Dear Colonel Miller and Lt. Colonel Acosta:

The New Mexico Environment Department (NMED) received the U.S. Air Force (Permittee) Kirtland Air Force Base (Facility) *Groundwater Monitoring Work Plan, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, New Mexico* (Request), dated February 7, 2021.

The Request states that additional time is requested to ensure the document meets the

requirements established in the October 2, 2020 NMED letter requesting a comprehensive groundwater monitoring work plan and Part 6.2.4.2 of the Kirtland Air Force Base Resource Conservation and Recovery Act Permit (No. NM9570024423).

NMED hereby grants the Permittee's request for a time extension. As requested, the Permittee must submit the Groundwater Monitoring Work Plan no later than **April 27, 2021**.

If you have any questions regarding this letter, please contact me at (505) 476-6035.

Sincerely,

Kevin Pierard

Digitally signed by Kevin Pierard
Date: 2021.02.16 11:21:46 -07'00'

Kevin M. Pierard, Chief
Hazardous Waste Bureau

cc: B. Wear, NMED HWB
L. Andress, NMED HWB
S. Kottkamp, KAFB
K. Lynnes, KAFB
C. Cash, KAFB
D. Agnew, ABCWUA
A. Tafoya, VA

File: KAFB 2021 and Reading

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
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Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 11, 2019

Colonel David S. Miller
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117

Lt. Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil engineer Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117

RE: QUARTERLY MONITORING REPORT FOR APRIL-JUNE 2019
BULK FUELS FACILITY SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO
EPA ID# NM6213820974
HWB-KAFB-19-017

Dear Colonel Miller and Lt. Colonel Acosta:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (Permittee) *Quarterly Monitoring Report for April-June 2019, Bulk Fuels Facility, Solid Waste Management Unit ST-106/SS-11* (Report), dated September 2019 and received September 27, 2019.

No revision to the Report is required. NMED's attached comments are intended to provide direction to the Permittee in the preparation of future quarterly monitoring reports. Necessary changes based upon NMED's comments should be incorporated into future reports. The Permittee must ensure that future monitoring reports fully comply with Kirtland Air Force Base KAFB) Hazardous Waste Facility Permit (Permit) Section 6.1.6. Quarterly Progress Reports, Section 6.2.4.1. Quarterly Reporting, and Section 6.2.4.4. Periodic Monitoring Reports. Additional guidance on preparing groundwater monitoring reports can be found in NMED's *General Reporting Requirements for Routine Groundwater Monitoring at RCRA Sites.*

Col. Miller and Lt. Col. Acosta
Quarterly Monitoring Report for April-June 2019
Page 2 of 2

Should you have any questions please Rob Murphy of my staff at robert.murphy@state.nm.us or (505) 476-6022.

Sincerely,

Kevin Pierard

Digitally signed by Kevin Pierard
Date: 2020.07.11 08:25:15 -06'00'

Kevin M. Pierard, Chief
Hazardous Waste Bureau

Attachments I

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
L. Andress, NMED HWB
R. Murphy, NMED HWB
L. King EPA Region 6 (6LCRRC)
S. Clark, KAFB
K. Lynnes, KAFB

File: KAFB 2020 Bulk Fuels Facility Spill and Reading

Attachment

Col. Miller and Lt. Acosta
Quarterly Monitoring Report for April-June 2019
Attachment, Page 1 of 4

GENERAL COMMENTS:

1. Monitoring Report Contents

NMED Comment:

Based on issues identified in this Report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable:

a. The response to NMED's comments must be included as Appendix A of each document revision.
b. All field methods for the project must be documented in an appendix, as required by Permit Section 6.2.4.4.11. The documentation must be specific to each monitoring activity, such as soil vapor monitoring, groundwater monitoring, or operation and maintenance of the groundwater treatment system. References to quality assurance project plans (QAPPs), standard operating procedures (SOPs), or work plans are not acceptable. All deviations from approved work plans must be discussed and explained in a Deviations section.
c. Wells must be consistently referred to by the same name/designation in all periodic reports, sections of the text, tables, and figures. The designations must match those provided in the digital analytical data files.
d. Sampling data tables must include the practical quantitation limit (PQL) and listed laboratory report detection limit (RDL) for each analysis.
e. Sampling data tables must include the appropriate screening levels for data comparison.
f. Analytical data tables in digital format must include a column that indicates which analytical data report the specific sample information can be found. This link must correspond to the analytical data report file name.
g. Data quality exceptions, such as when the PQL exceeds the corresponding screening level, must be identified as such in all tables and figures (see Permit Section 6.5.18).
h. Analytical data provided in digital format such as Microsoft Excel or Access files must be provided in a sortable, searchable format. Previous reports have provided digital data in the same format as the printed tables. These tables are not sortable or searchable. Provide the tables in a standard database format.
i. Analytical data packages must be submitted in accordance with KAFB Permit Section 6.5.18.2, Laboratory Deliverables.
j. All tables, figures, and appendices must be appropriately numbered and titled.
k. Every page of every submittal, including all pages within all sections and appendices, must be numbered either sequentially or in some other format acceptable to NMED.

2. Analytical Data Detection and Quantitation Limits

NMED Comment: Many of the analytical data tables presented in the Report list the limit of detection (LOD) for each sample analysis; however, it is not clear if this value represents the laboratory method detection limit or reporting detection limit. Some tables list the LOD and some the limit of quantification (LOQ). The permittee must provide the method detection limit (MDL) in the data tables. In addition, the Permittee must include the reporting detection limit (assuming this is the Permittee's "LOD") and the PQL (assuming this is the Permittee's "LOQ") for each sample analyzed in the data tables.

The Permittee's Quality Assurance Project Plans (QAPPs) indicate that the Permittee is using three different variations of terminology for method reporting limits, including one which seems to be backwards. The Permittee's QAPP for Vadose Zone Treatability Studies Attachment 1, Tables 1-1a, Method Reporting Limits – Drinking Water, 1-1b, Method Report Limits – Soil and Investigation Derived Waste, and 1-1c, Method Reporting Limits – Volatile Organic Compounds in Air, all seemingly use LOQ appropriately (as the PQL), but there is a lack of consistency between the method detection limit and reporting detection limit.

In Table 1-1a, Drinking Water, "MDL" appears to equate to the method detection limit, and "LOD" appears to equate to the reporting detection limit. In Table 1-1b, Soil, "LOD" appears to equate to the method detection limit and "DL" appears to equate to the reporting detection limit. In Table 1-1c, Air, "DL" appears to equate to the method detection limit and "LOD" appears to equate to the reporting detection limit. Based on the fact that the PQL must be greater than the reporting detection limit and the reporting detection limit must be greater than the method detection limit, Table 1-1b, Soil, appears to be wrong. NMED is assuming that similar tables appear in the QAPP for quarterly monitoring.

These issues cause confusion for the reviewer, community stakeholders, and the public, and increases the time required to review submittals from the Permittee. The Permittee must use appropriate and consistent terms for Quality Assurance /Quality Control in all periodic reporting submittals and for all media (e.g., use MDL consistently instead of DL). While NMED does not review or approve QAPPs, the Permittee must assure that they are providing their contractors with the appropriate information to provide appropriate, consistent, and accurate information to NMED. Consistency in reporting by the Permittee will reduce both agency and Air Force internal review times.

SPECIFIC COMMENTS:

3. Table of Contents, Appendix B, page iv:

NMED Comment: Appendix B, New Activities Supporting Information, contains well completion reports for four new wells installed and developed in accordance with the NMED-approved 2017 *Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling*. KAFB Permit Section 6.2.2.1.2, Site Investigations-Investigation Reports,

and Section 6.2.4.3, Reporting Requirements-Investigation Reports, require that the information and data collected from all investigation activities conducted during the quarter be submitted to NMED as separate, stand-alone reports. The Permittee must submit individual reports for all investigation activities conducted in support of the ongoing investigation of the bulk fuels facility spill, rather than submit the information as appendices in quarterly reports.

4. **Section 2.5 Q2 2019 Soil Vapor Data, page 2-4:**

Permittee Statement: "The RCRA permit does not specify cleanup levels for soil vapor. The quarterly reports are not intended to assess risk; the vapor data are used to assess concentration trends. The risk assessment (USACE,2017e) compares vapor concentrations to the vapor intrusion screening levels in the NMED Risk Assessment Guidance for Site Investigations and Remediation. All EDB and benzene concentrations are compared against 3,800 and 3,200 micrograms per cubic meter (µg/m3), respectively. HC concentrations are compared against 1,000 parts per million by volume (ppmv). The comparison concentrations used in this report were determined by historical maximum and minimum soil vapor results to show which SVMPs had relatively high or low concentrations."

NMED Comment: The Permittee must clarify if the comparison values for EDB, benzene, and HC represent the historical maximum or minimum, or some other calculated value so that changes relative to the values can be evaluated. The Permittee must also provide a reference for the historical soil vapor values. The Permittee accurately states that quarterly reports are not intended to assess risk; however, the Permittee must provide a comparison of detected concentrations to a regulatory standard for the purpose of assessing the presence and location of contaminants of concern. NMED's *Risk Assessment Guidance for Site Investigations and Remediation* (2019 and as updated) vapor intrusion screening levels (VISLs) must be used as a first-tier screening assessment.

5. **Section 2.2 Bioventing Pilot Test, page 2-2:**

Permittee Statement: "A bioventing report will be submitted on January 31, 2020 as requested by NMED in a letter dated February 25, 2019 (NMED, 2019). This report will include data collected up to Q4 2019. Data collected after Q4 2019 will be provided in the relevant quarterly monitoring reports. The Q4 2020 Quarterly and Annual Monitoring Report will include results to date, and the final results of the bioventing pilot test will be provided in the Q4 2021 Quarterly and Annual Monitoring Report."

NMED Comment: Bioventing pilot test data is collected each quarter; therefore, the Permittee must provide quarterly data updates in separate quarterly status reports specific to the bioventing pilot study to allow NMED to provide timely adjustment and inputs to the bioventing system. The final results of the bioventing pilot test must be submitted as a stand-alone document rather than as an appendix to the Q4 2021 Quarterly and Annual

Col. Miller and Lt. Acosta
Quarterly Monitoring Report for April-June 2019
Attachment, Page 4 of 4

Monitoring Report.

6. **Section 3.3.1 Sampling Deviations, page 3-3:**

Permittee Statement: "Groundwater samples were not obtained from seven wells in Q2 2019. Three wells (KAFB-106001, KAFB-106008, and KABF-106079) could not be sampled due to suspected biofouling. These wells will be sampled using passive sampling techniques in the future after well rehabilitation is evaluated."

NMED Comment: The Permittee must provide additional information in a subsequent quarterly report on suspected biofouling of wells KAFB-106001, KAFB-106008, and KABF-106079, such as evidence for biofouling, the source of biofouling, and the date when biofouling was first suspected. Well KABF-106079 is less than 1000ft from interim measure extraction well KAFB-106239. Provide information on the potential for suspected biofouling at KAFB-106079 to impact KAFB-106239 and the Groundwater Treatment System. The Permittee must also submit a work plan for evaluating and conducting rehabilitation of the three wells. Use of passive sampling techniques for wells KAFB-106001 and KABF-106079 is contingent upon NMED approval. Because LNAPL was previously detected in well KAFB-106008, use of passive sampling is not appropriate.

7. **Section 3.6.1.1 EDB Analytical Results, page 3-5:**

Permittee Statement: *Five EDB exceedances were from wells north of Ridgecrest Drive SE but none were north of Gibson Boulevard SE.*

NMED Comment: Figures 3-5 and 3-6 present EDB concentrations in groundwater for reference elevation 4857 and 4838, respectively. Both figures depict the northern extent of the EDB plume as being north of Gibson Boulevard SE. The Permittee must revise the statement and figures for accuracy if they are included in future periodic reports.

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 2, 2020

Colonel David S. Miller
Base Commander
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117

Lt. Colonel Wayne J. Acosta
Civil Engineer Office
377 Civil engineer Division
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 87117

RE: REPORTING REQUIREMENTS FOR ALL DOCUMENT SUBMITTALS
KIRTLAND AIR FORCE BASE, NEW MEXICO
EPA ID# NM6213820974
HWB-KAFB-20-MISC

Dear Colonel Miller and Lt. Colonel Acosta:

In our discussions with Kirtland Air Force Base (KAFB or Permittee) staff, a concern was raised that New Mexico Environment Department (NMED) comments on specific submittals contained direction that more broadly applies to various activities conducted at KAFB. Your staff indicated that this creates difficulty for them in tracking directions provided by NMED. To respond to such concerns, NMED is providing the following compilation to clarify requirements for all documents submitted to NMED by the Permittee.

In general, many KAFB submittals to NMED consistently contain a substantial number of errors that should be identified during quality assurance and quality control reviews prior to submittal. In discussions with KAFB staff, NMED staff was assured that steps are being taken to review and enhance document quality control and address these recurring issues to assist NMED in expediting document reviews and to assist the public in better understanding the documents that are submitted by the Permittee.

1. **Laboratory Deliverables:** Section 6.5.18.2, Laboratory Deliverables, of the KAFB Resource Conservation and Recovery Act (RCRA) Permit (KAFB Permit), states the requirements for analytical laboratory reporting. The section states, "[l]aboratory analytical data packages shall be prepared in accordance with EPA-established Level III or IV analytical support protocols." The final paragraph of the permit section goes on to state, "[t]he Permittee shall present summary tables of these data and Level II QC results to the Department in reports or other documents prepared in accordance with Permit Section 6.2.4. Raw analytical data, including calibration curves, instrument calibration data, data calculation work sheets, and other laboratory supporting data for samples from this project, shall be compiled and kept on file at the Facility for reference. The Permittee shall make all data available to the Department upon request." Therefore, for purposes of reporting, Level II QC results are necessary. Level III and IV data must be maintained by the Permittee to be made available upon request.

2. **General Guidelines:** NMED has included an attachment titled *General Reporting Guidelines* that provides guidance regarding its expectations of submittals to the Hazardous Waste Bureau. The Permittee must consult the guidance during document preparation.

3. **Document Scopes of Work:** In order to avoid confusion, all work plans must be written for one specific scope of work.

4. **Document Titles vs. Content:** All future document titles on cover pages must include all major scope activities incorporated within that document, including those presented in appendices. The names of all future documents and scopes of work must not change during the RCRA corrective action process (i.e., work plans through reports).

5. **Responses to NMED Comments:** Responses to NMED comments must be included as Appendix A of every document revision. Redline-strikeout versions must include <u>all</u> changes made to the corresponding revised document.

6. **Field Methods:** All field methods for the project must be documented in the text of the document or an appendix. The documentation must be specific to each monitoring activity, such as soil vapor monitoring, groundwater monitoring, or operation and maintenance of the groundwater treatment system. References to quality assurance project plans (QAPPs), standard operating procedures (SOPs), previous work plans, or other documents are not acceptable. All deviations from approved work plans must be discussed and explained in a Deviations section.

7. **Well Designations:** Wells must be consistently referred to by the same name/designation in all sections of the text, all tables, and all figures. The designation must also match that provided in the digital analytical data files.

8. **Data Tables, Figures, and Appendices:**
   - **a.** Sampling data tables must be logically arranged, either chronologically or by investigation, to facilitate location of information.
   - **b.** Sampling data tables must include the practical quantitation limit (PQL) and reporting detection limit for each analysis. Method detection limits must also be provided for each analytical method.
   - **c.** Sampling data tables must include the appropriate screening levels for data comparison.
   - **d.** Analytical data tables in digital format must include a column that indicates which analytical data report the specific sample information can be found. This link must correspond to the analytical data report file name.
   - **e.** Data from analyses where the PQL (or LOQ) exceeds 20% of the screening level are data quality exceptions and must be identified as such in all tables and figures.
   - **f.** Analytical data provided in digital format such as Excel files must be provided in a sortable, searchable format that can be uploaded into a database. Previous reports have provided digital data in the same format as the tables in the text which are not sortable or searchable.
   - **g.** Data in tables and figures must be presented with a consistent and appropriate number of significant figures.
   - **h.** All points (wells), structures, infrastructure, roads, etc. depicted on figures must be labeled.
   - **i.** All tables, figures, and appendices must be appropriately numbered and titled.
   - **j.** All figures must include a scale and a north arrow.
   - **k.** Data tables and figures must undergo quality assurance and quality control review prior to submittal to NMED.

9. **Document organization:** Every page of each submittal, including all pages within all sections and appendices, must be numbered either sequentially or in some other logical format.

Many of the issues listed above were discussed during a conference call between NMED and KAFB that was held on May 7, 2020; KAFB staff stated that they understood these issues and agreed to correct these problems. While NMED made every attempt to be comprehensive, other issues may arise. If NMED identifies further issues that occur in multiple submittals, NMED will contact KAFB staff informally to discuss the issues and follow up with further correspondence and direction.

Should you have any questions or wish to meet with us to discuss these comments, please contact me at (505) 476-6035 or your staff may contact Ben Wear at (505) 476-6041.

Sincerely,

Kevin M. Pierard, Chief
Hazardous Waste Bureau

Attachment

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
L. Andress, NMED HWB
M. Suzuki, NMED HWB
R. Murphy, NMED HWB
L. King EPA Region 6 (6LCRRC)
C. Cash, KAFB
S. Kottkamp, KAFB
K. Lynnes, KAFB

File: KAFB 2020 Bulk Fuels Facility Spill and Reading

Attachment

GENERAL REPORTING GUIDELINES

1. Overview

The purpose of this guidance document is to provide the general requirements and formats for documents related to corrective action activities required under the Resource Conservation and Recovery Act (RCRA). This guidance is not intended to provide document requirements for every potential corrective action conducted at the facility. Therefore, the formats for all types of documents are not presented below. The formats described include the general reporting requirements and formats for site-specific investigation work plans, investigation reports, routine monitoring reports, risk assessment reports, and corrective measures evaluations. Permittees should generally consider the documents to be the equivalents of RCRA facility investigation (RFI) work plans, RFI reports, periodic monitoring reports, risk assessments, and corrective measures study (CMS) reports, respectively, for the purposes of RCRA compliance. Permittees must include detailed, site-specific requirements in all interim status unit, solid waste management unit (SWMU), and Area of Concern (AOC) investigation work plans, investigation reports, monitoring reports, and corrective measures evaluations. All plans and reports should be prepared with technical and regulatory input from the NMED. All work plans and reports must be submitted to the NMED in the form of two paper copies and an electronic copy.

The document requirements listed do not include all sections that may be necessary to complete each type of document listed. A permittee or the NMED may determine that additional sections are required to address additional site-specific issues or information collected during corrective action or monitoring activities not listed below. However, permittees must submit variations of the general report format and the formats for documents not listed in this guidance in outline form to the NMED for approval prior to submittal of the documents. The NMED will approve or disapprove, in writing, the proposed document outline after receipt of the outline. If the NMED disapproves the report outline, the NMED will notify the permittee, in writing, of the outline's deficiencies and will specify a date for submittal of a revised report outline. All documents submitted by the Permittee must follow the general approach and limitations for data presentation described in this guidance document. If in conflict with a facilities RCRA Permit, the Permit condition should be followed.

2. Investigation Work Plan

Permittees must fulfill the requirements for preparation of work plans for unit-specific or corrective action activities at the facility using the general outline below. The minimum requirements for describing proposed activities within each section are included. All research, locations, depths and methods of exploration, field procedures, analytical analyses, data collection methods, and schedules must be included in each work plan. In general, interpretation of data acquired during previous investigations must be presented only in the background sections of the work plans. The other text sections of the work plans must be reserved for presentation of anticipated site-specific activities and procedures relevant to the project. The general work plan outline is provided below.

2.1 Title Page

The title page must include the type of document, facility name and the unit, SWMU, or AOC name(s) and the submittal date. A signature block providing spaces for the name, title, and organization of the preparer and the responsible representative of the facility must be provided on the title page in accordance with the signature requirements in 40 CFR 270.11(b).

2.2 Executive Summary (Abstract)

The executive summary (or abstract) must provide a brief summary of the purpose and scope of the investigation to be conducted at the subject site. The facility, unit, SWMU, or AOC name, revision number if applicable, and location must be included in the executive summary.

2.3 Table of Contents

The table of contents must list all text sections and subsections, tables, figures, and appendices or attachments included in the work plan. The corresponding page numbers for the titles of each section of the work plan must be included in the table of contents.

2.4 Introduction

The introduction must include the facility name, unit name and location, and unit status (e.g., active operations, closed, corrective action). General information on the current site usage and status must be included in this section. A brief description of the purpose of the investigation and the type of site investigation to be conducted must be provided in this section.

2.5 Background

The background section must describe relevant background information. This section must briefly summarize historical site uses including the locations of current and former site structures and features. A labeled figure must be included in the document showing the locations of current and former site structures and features. The locations of pertinent subsurface features such as pipelines, underground tanks, utility lines, and other subsurface structures must be included in the background summary and labeled on the site plan.

This section must identify potential receptors, including groundwater, and include a brief summary of the type and characteristics of all waste and all contaminants, the known and possible sources of contamination, the history of releases or discharges of contamination, and the known extent of contamination. This section must include brief summaries of results of previous investigations, including references to pertinent figures, data summary tables, and text in previous reports. At a minimum, detections of contaminants encountered during previous investigations must be presented in table format, with an accompanying figure showing sample locations. References to previous reports must include page, table, and figure numbers for referenced information. Summary data tables and site plans showing relevant investigation locations must be included in the Tables and Figures sections of the document, respectively.

2.6 Site Conditions

2.6.1 Surface Conditions

A section on surface conditions must provide a detailed description of current site topography, features, and structures including a description of drainages, vegetation, erosional features, and a detailed description of current site uses and operations at the site. In addition, descriptions of features located in surrounding sites that may have an impact on the subject site regarding sediment transport, surface water runoff, or contaminant fate and transport must be included in this section.

2.6.2 Subsurface Conditions

A section on subsurface conditions must provide a brief, detailed description of the site conditions observed during previous subsurface investigations, including relevant soil horizons, stratigraphy, presence of vadose zone fluids and groundwater, and other relevant information. A site plan showing the locations of all borings and excavations advanced during previous investigations must be included in the Figures section of the work plan. A brief description of the anticipated stratigraphic units that may be encountered during the investigation may be included in this section, if no previous investigations have been conducted at the site.

2.7 Scope of Activities

A section on the scope of activities must briefly describe a list of all anticipated activities to be performed during the investigation, including background information research, health and safety requirements that may affect or limit the completion of tasks, drilling, test pit or other excavations, well construction, field data collection, survey data collection, chemical analytical testing, aquifer testing, and IDW storage, disposal, and reporting.

2.8 Investigation Methods

A section on investigation methods must provide a description of all anticipated locations and methods for conducting the activities to be performed during the investigation. This section must include, but is not limited to, research methods, health and safety practices that may affect the completion of tasks, drilling methods, test pit or other excavation methods, sampling intervals and methods, well construction methods, field data collection methods, geophysical and land survey methods, field screening methods, chemical analytical testing, materials testing, aquifer testing, pilot testing, and other proposed investigation and testing methods. This information may also be summarized in table format, if appropriate.

2.9 Monitoring and Sampling Program

A section on monitoring and sampling must describe the anticipated monitoring and sampling program to be implemented after the initial investigation activities are completed. This section must provide a description of the anticipated vadose zone fluids, groundwater, vadose zone vapor, vadose zone moisture, and other monitoring and sampling programs to be implemented at the unit.

2.10 Schedule

A section must provide the anticipated schedule for completion of field investigation, pilot testing, and monitoring/sampling activities. In addition, this section must provide a schedule for submittal of reports and data to the NMED, including a schedule for submitting status reports, preliminary data, and the final investigation report.

2.11 Tables

The following summary tables may be included in the investigation work plans if previous investigations have been conducted at the unit. Data presented in the tables must include information on dates of data collection, analytical methods, detection limits, and significant data quality exceptions. All data tables must include only detected analytes and data quality exceptions that could potentially mask detections. The following tables must be included in investigation work plans, as applicable;

a. summaries of regulatory criteria, background, and applicable cleanup levels (may be included in the analytical data tables instead of as separate tables);

b. summaries of historical field survey location data;

c. summaries of historical field screening and field parameter measurements of soil, rock, sediments, groundwater, surface water, and air quality;

d. summaries of historical soil, rock, or sediment laboratory analytical data must include the analytical methods, detection limits, and significant data quality exceptions that could influence interpretation of the data;

e. summaries of historical groundwater elevation and depth to groundwater data. The table must include the monitoring well depths, the screened intervals in each well, and the dates and times measurements were taken;

f. summaries of historical groundwater laboratory analytical data. The analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that could influence interpretation of the data;

g. summary of historical surface water laboratory analytical data. The analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that could influence interpretation of the data;

h. summary of historical air sample screening and chemical analytical data. The data tables must include the screening instruments used, laboratory analytical methods, detection limits, and significant data quality exceptions that could influence interpretation of the data; and

i. summary of historical pilot test or other test data, if applicable, including units of measurement and types of instruments used to obtain measurements.

2.12 Figures

The following figures must be included with each investigation work plan for each site, including presentation of data where previous investigations have been conducted. All figures must include an accurate bar scale and a north arrow. An explanation must be included on each figure for all abbreviations, symbols, acronyms, and qualifiers. The following figures must be included in investigation work plans, as applicable:

a. a vicinity map showing topography and the general location of the site relative to surrounding features and properties;

b. a unit site plan that presents pertinent site features and structures, underground utilities, well locations, and remediation system locations and details; off-site well locations and other relevant features must be included on the site plan, if appropriate; additional site plans may be required to present the locations of relevant off-site well locations, structures, and features;

c. figures showing historical and proposed soil boring locations, excavation locations, and sampling locations;

d. figures presenting historical soil sample field screening and laboratory analytical data;

e. figures presenting the locations of all existing and proposed borings and vapor monitoring point locations,

f. figures presenting historical vadose zone organic vapor data;

g. figures showing all existing and proposed monitoring wells and piezometers;

h. figures presenting historical groundwater and vadose zone fluid elevation data, and indicating groundwater and vadose zone fluid flow directions;

i. figures presenting historical groundwater and vadose zone fluid laboratory analytical data, if applicable; the chemical analytical data corresponding to each sampling location can be presented in tabular form on the figure or as an isoconcentration map;

j. figures presenting historical and proposed vadose zone fluid neutron probe access tube locations and field measurement data for soil moisture, if applicable;

k. figures presenting historical surface water laboratory analytical data, if applicable;

l. figures showing historical and proposed air sampling locations and presenting historical air quality data, if applicable;

m. figures presenting historical pilot testing locations and data, where applicable, including site plans and graphic data presentation; and

n. figures presenting geologic cross-sections based on outcrop and borehole data acquired during previous investigations, if applicable.

2.13 Appendices

An IDW management plan must be included as an appendix to the investigation work plan. Additional appendices may be necessary to present additional data or documentation not listed above.

3. Investigation Report

Permittees must prepare investigation reports at the facility using the general outline below. Investigation Reports are the reporting mechanism for presenting the results of completed Investigation Work Plans. This section describes the minimum requirements for reporting on site investigations. All data collected during each site investigation event in the reporting period must be included in the reports. In general, interpretation of data must be presented only in the background, conclusions, and recommendations sections of the reports. The other text sections of the reports must be reserved for presentation of facts and data without interpretation or qualifications. The general report outline is provided below.

3.1 Title Page

The title page must include the type of document and version number, the facility name, the unit, SWMU, or AOC, and the submittal date. A signature block providing spaces for the name, title, and organization of the preparer and the responsible facility representative must be provided on the title page in accordance with the signature requirements in 40 CFR 270.11(b).

3.2 Executive Summary

The executive summary must provide a brief summary of the purpose, scope, and results of the investigation conducted at the subject site during the reporting period. In addition, this section must include a brief summary of conclusions based on the investigation data collected and recommendations for future investigation, monitoring, remedial action, or site closure.

3.3 Table of Contents

The table of contents must list all text sections, subsections, tables, figures, and appendices or attachments included in the report. The corresponding page numbers for the titles of each section of the report must be included in the table of contents.

3.4 Introduction

The introduction section must include the facility name, unit name and location, and unit status (e.g., active operations, closed, corrective action). General information on the site usage and status must be included in this section. A brief description of the purpose of the investigation, the type of site investigation conducted, and the type of results presented in the report also must be provided in this section.

3.5 Background

The background section must describe relevant background information. This section must briefly summarize historical site uses including the locations of current and former site structures and features. A labeled figure must be included in the document showing the locations of current and former site structures and features. The locations of subsurface features such as pipelines, underground tanks, utility lines, and other subsurface structures must be included in the background summary and labeled on the figure. In addition, this section must include a brief summary of the possible sources of contamination, the history of releases or discharges of contamination, the known extent of contamination, and the results of previous investigations including references to previous reports. The references to previous reports must include page, table, and figure numbers for referenced information. A site plan showing relevant investigation locations and summary data tables must be included in the Figures and Tables sections of the document, respectively.

3.6 Scope of Activities

This section on the scope of activities must briefly describe all activities performed during the investigation event including background information research, implemented health and safety measures that affected or limited the completion of tasks, drilling, test pit or other excavation methods, well construction methods, field data collection, survey data collection, chemical analytical testing, aquifer testing, remediation system pilot testing, and IDW storage or disposal.

3.7 Field Investigation Results

A section must provide a summary of the procedures used and the results of all field investigation activities conducted at the site including, but not limited to, the dates that investigation activities were conducted, the type and purpose of field investigation activities performed, field screening measurements, logging and sampling results, pilot test results, construction details, and conditions observed. Field observations or conditions that altered the planned work or may have influenced the results of sampling, testing, and logging must be reported in this section. At a minimum, the following subsections must be included, where appropriate.

3.7.1 Surface Conditions

A section on surface conditions must describe current site topography, features, and structures including topographic drainages, man-made drainages, vegetation, and erosional features. It must also include a description of current site uses and any operations at the site. In addition, descriptions of features located in surrounding sites that may have an impact on the subject site

regarding sediment transport, surface water runoff, or contaminant transport must be included in this section.

3.7.2 Exploratory Drilling or Excavation Investigations

A section must describe the locations, methods, and depths of subsurface explorations. The description must include the types of equipment used, the logging procedures, exploration equipment, decontamination procedures, and conditions encountered that may have affected or limited the investigation. Samples obtained from all exploratory borings and excavations must be visually inspected and the soil or rock type classified in general accordance with ASTM D2487 (Unified Soil Classification System) and D2488, or AGI Methods for soil and rock classification. Detailed logs of each boring must be completed in the field by a qualified engineer or geologist.

A description of the site conditions observed during subsurface investigation activities must be included in this section, including soil horizon and stratigraphic information. Site plans showing the locations of all borings and excavations must be included in the Figures section of the report. Boring and test pit logs for all exploratory borings and test pits must be presented in an appendix or attachment to the report.

3.7.3 Subsurface Conditions

A section on subsurface conditions must describe known subsurface lithology and structures based on observations made during the current and previous subsurface investigations, including interpretation of geophysical logs and as-built drawings of man-made structures. A description of the known locations of pipelines, utility lines, and observed geologic structures must also be included in this section. A site plan showing boring and excavation locations and the locations of the site's above- and below-ground structures must be included in the Figures section of the report. In addition, cross-sections must be constructed, if appropriate, to provide additional visual presentation of site or regional subsurface conditions.

3.7.4 Monitoring Well Construction, Boring, or Excavation Abandonment

A section must describe the methods and details of monitoring well construction and the methods used to abandon or backfill exploratory borings and excavations. The description must include the dates of well construction, boring abandonment, or excavation backfilling. In addition, boring logs, test pit logs, and well construction diagrams must be included in an attachment or appendix. Well construction diagrams must be included with the associated boring logs for borings that are converted to monitoring wells.

3.7.5 Groundwater Conditions

A section must describe groundwater conditions observed beneath the subject site and relate local groundwater conditions to regional groundwater conditions. A description of the depths to water, aquifer thickness, and groundwater flow directions must be included in this section for alluvial groundwater, shallow perched groundwater, intermediate perched groundwater, and regional groundwater, as appropriate to the investigation. Figures showing well locations,

surrounding area, groundwater elevations, and flow directions for each hydrologic zone must be included in the Figures section of the report.

3.7.6 Surface Water Conditions

A section must describe surface water conditions and include a description of surface water runoff, surface water drainage, surface water sediment transport, and contaminant transport in surface water as suspended load and as a dissolved phase in surface water via natural and man-made drainages, if applicable. A description of contaminant fate and transport must be included, if appropriate.

3.7.7 Subsurface Air and Soil Moisture Conditions

A section must describe subsurface air monitoring and sampling methods used during the site investigation. It must also describe observations made during the site investigation regarding subsurface flow pathways and the subsurface air-flow regime.

3.7.8 Materials Testing Results

A section must discuss the materials testing results, such as core permeability testing, grain size analysis, or other materials testing results. Sample collection methods, locations, and depths must also be included. Corresponding summary tables must be included in the Tables section of the report.

3.7.9 Pilot Testing Results

A section must discuss the results of any pilot testing. Pilot testing is typically conducted after initial subsurface investigations are completed and the need for additional investigation or remediation has been evaluated. Pilot testing, including aquifer testing and remediation system pilot testing, must be addressed through separate pilot test work plans and reports. The format for pilot test work plans and reports must be approved by the NMED prior to submittal.

3.8 Regulatory Criteria

A section must set forth the applicable cleanup standards, screening levels, and risk-based cleanup goals for each pertinent medium at the subject site. The appropriate cleanup levels for each site must be included if site-specific levels have been established at separate facility sites or units. A table summarizing the applicable cleanup standards must be included as part of the document. Alternately, the report may include applicable cleanup standards as a column in the data tables. Risk-based evaluation procedures, if used to calculate cleanup levels, must be presented in a separate document or in an appendix to this report. If cleanup levels calculated in a risk evaluation are employed, the risk evaluation document must be referenced and must include pertinent page numbers for referenced information.

3.9 Site Contamination

A section must provide a description of sampling intervals and methods for detection of surface and subsurface contamination in soils, rock, sediments, groundwater, surface water, and as vapor-phase contamination. Only factual information must be included in this section. Interpretation of the data must be reserved for the summary and conclusions sections of the report. Tables summarizing all sampling, testing, and screening results for detected contaminants must be prepared in a format approved by the NMED. The tables must be presented in the Tables section of the report.

3.9.1 Soil, Rock, and Sediment Sampling

A section must describe the sampling of soil, rock and sediment. It must include the dates, locations, and methods of sample collection, sampling intervals, sample logging methods, screening sample selection methods, and laboratory sample selection methods including the collection depths for samples submitted for laboratory analyses. A site plan showing the sample locations must be included in the Figures section of the report.

3.9.2 Sample Field Screening Results

A section must describe the field screening methods used during the investigation and the field screening results. Field screening results also must be presented in summary tables in the Tables section of the document. The limitations of field screening instrumentation and any conditions that influenced the results of field screening must be discussed in this subsection.

3.9.3 Soil, Rock, and Sediment Sampling Chemical Analytical Results

A section must briefly summarize the laboratory analyses conducted, the analytical methods and results and provide a comparison of the data to cleanup standards or established cleanup levels for the site. The laboratory results also must be presented in summary tables in the Tables section of the document. Field conditions and sample collection methods that could potentially affect the analytical results must be described in this section. If appropriate, soil analytical data must be presented with sample locations on a site plan and included in the Figures section of the report.

3.9.4 Subsurface Vapor Sampling

A section must describe the air and subsurface vapor sampling. It must describe the dates, locations, methods of sample collection, methods for sample logging, and methods for laboratory sample selection. A site plan showing all air and subsurface vapor sampling locations must be provided in the Figures section of the report.

3.9.5 Subsurface Vapor Field Screening Results

A section must describe the subsurface vapor field screening results. It must describe the field screening methods used for ambient air and subsurface vapors during the investigation and the field screening results. Field screening results must also be presented in summary tables in the Tables section of the report. The locations of ambient air and subsurface vapor screening sample

collection must be presented on a site plan included in the Figures section of the report. The limitations of field screening instrumentation and any conditions that influenced the results of field screening must be discussed in this section.

3.9.6 Air and Subsurface Vapor Laboratory Analytical Results

This section must describe the results of air and subsurface vapor laboratory analyses. It must describe the air sampling laboratory analytical methods and results and provide a comparison of the data to applicable cleanup levels for the site. The rationale or purpose for altering or modifying the subsurface vapor sampling program outlined in the site investigation work plan also must be provided in this section. Field conditions that may have affected the analytical results during sample collection must be described in this section. Tables summarizing the air sample laboratory, field, and analytical QA/QC data; applicable cleanup levels; and modifications to the air sampling program must be provided in the Tables section of the report. Contaminant concentrations must be presented as data tables or as isoconcentration contours on a map included in the Figures section of the report.

3.10 Conclusions

A conclusions section must provide a brief summary of the investigation activities and a discussion of the conclusions of the investigation conducted at the site. In addition, this section must provide a comparison of the results to applicable cleanup levels, and to relevant historical investigation results and analytical data. Potential receptors, including groundwater, must be identified and discussed. An explanation must be provided with regard to data gaps. A risk assessment may be included as an appendix to the investigation report; however, the risk analysis must be presented in the risk assessment format described in Permit Section 6.5. References to the risk analysis must be presented only in the summary and conclusions sections of the Investigation Report.

3.11 Recommendations

A section must discuss the need for further investigation, corrective measures, risk assessment and monitoring, or recommendations for corrective action completed based on the conclusions provided in the Conclusions section. It must include explanations regarding additional sampling, monitoring, and site closure. A corresponding schedule for further action regarding the site must also be provided.

3.12 Tables

This section must provide the following summary tables. Data presented in the tables must include the current data, dates of data collection, analytical methods, detection limits, and significant data quality exceptions. All summary data tables must include only detected analytes and data quality exceptions that could potentially mask detections. The following tables must be included in investigation reports, as applicable:

a. tables summarizing regulatory criteria, background levels, and applicable cleanup levels; this information may be included in the analytical data tables instead of as separate tables;

b. tables summarizing field survey location data; separate tables must be prepared for well locations and individual medium sampling locations except where the locations are the same for more than one medium;

c. tables summarizing field screening and field parameter measurements of soil, sediment, vadose zone fluid, vadose zone vapor, vadose zone moisture, and groundwater, surface water, and air quality;

d. a table summarizing soil laboratory analytical data; it must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

e. a table summarizing the groundwater elevations and depth-to-water data; the table must include the monitoring well depths and the screened intervals in each well;

f. a table summarizing the groundwater laboratory analytical data; the analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

g. a table summarizing the surface water laboratory analytical data; the analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

h. A table summarizing the air sample screening and laboratory analytical data; the data tables must include the screening instruments used, laboratory analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

i. tables summarizing the pilot testing data, if applicable, including units of measurement and types of instruments used to obtain measurements; and

j. a table summarizing the materials testing data, if applicable.

3.13 Figures

All figures must be included with each investigation report, as appropriate. All figures must include a scale and a north arrow. An explanation must be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers. All maps must have a date. A section must provide the following figures:

a. a vicinity map showing topography and the general location of the site relative to surrounding features and properties;

b. a site plan that presents pertinent site features and structures, underground utilities, well locations, and remediation system locations and details; off-site well locations and other relevant features must be included on the site plan; additional site plans may be required to present the locations of relevant off-site well locations, structures and features;

c. figures showing boring, excavation, and sampling locations;

d. figures presenting soil sample field screening and laboratory analytical data;

e. figures displaying the locations of all newly installed and existing wells and borings;

f. figures presenting monitoring well locations, groundwater elevation data, and groundwater flow directions;

g. figures presenting groundwater laboratory analytical data, including any past data requested by the NMED; the chemical analytical data corresponding to each sampling location may be presented in table form on the figure or as an isoconcentration map;

h. figures presenting surface water sample locations and field measurement data including any past data requested by the NMED;

i. figures presenting surface water laboratory analytical data including any past data, if applicable; the laboratory analytical data corresponding to each sampling location may be presented in tabular form on the figure;

j. figures showing air and subsurface vapor sampling locations and presenting air and subsurface vapor quality data; the field screening or laboratory analytical data corresponding to each sampling location may be presented in tabular form on the figure or as an isoconcentration map;

k. figures presenting geologic cross-sections based on outcrop and borehole data; and

l. figures presenting pilot testing locations and data, where applicable, including site plans or graphic data presentation.

3.14 Appendices

Each investigation report must include the following appendices. Additional appendices may be necessary to present data or documentation not listed below.

3.14.1 Field Methods

An appendix must provide detailed descriptions of the methods used to acquire field measurements of each media that was surveyed or tested during the investigation. Methods must include, but are not limited to, exploratory drilling or excavation methods, the methods and types

of instruments used to obtain field screening, field analytical or field parameter measurements, instrument calibration procedures, sampling methods for each medium investigated, decontamination procedures, sample handling procedures, documentation procedures, and a description of field conditions that affected procedural or sample testing results. Methods of measuring and sampling during pilot testing must be reported in this appendix, if applicable. Copies of IDW disposal documentation must be provided in a separate appendix.

3.14.2 Boring/Test Pit Logs and Well Construction Diagrams

An appendix must provide boring logs, test pit or other excavation logs, and well construction details. In addition, a key to symbols and a soil or rock classification system must be included in this appendix. Geophysical logs must be provided in a separate section of this appendix.

3.14.3 Chemical Analytical Program

Chemical analytical methods, a summary of data quality objectives, and a summary of data quality review procedures must be reported in an appendix. A summary of data quality exceptions and their effect on the acceptability of the field and laboratory analytical data with regard to the investigation and the site status must be included in this appendix, along with references to case narratives provided in the laboratory reports.

3.14.4 Chemical Analytical Reports

A section must include all laboratory chemical analytical data generated for the reporting period. The reports must include all chain-of-custody records and QA/QC results provided by the laboratory. The laboratory reports may be provided electronically in a format approved by the NMED and must be in the form of a final laboratory report. Laboratory report data tables may be submitted in Microsoft Excel format. Hard (paper) copies of the chain-of-custody forms must be submitted with the reports regardless of whether the final laboratory report is submitted electronically or in hard copy.

3.14.5 Other Appendices

Other appendices containing additional information must be included as required by the NMED or as otherwise appropriate.

4. Periodic Monitoring Report

The Permittee must use the following guidance for preparing periodic monitoring reports. The reports must present the results of periodic groundwater, surface water, vapor, and remediation system monitoring at the facility. The following sections provide a general outline for monitoring reports and the minimum requirements for reporting of periodic monitoring conducted at the facility. All data collected during each monitoring or sampling event in the reporting period must be included in the reports. In general, interpretation of data must be presented only in the background, conclusions, and recommendations sections of the reports. The other text sections of the reports must be reserved for presentation of facts and data without interpretation or qualifications.

4.1 Title Page

The title page must include the type of document, revision number if applicable, the facility name, the unit, SWMU, or AOC name(s), and the submittal date. A signature block providing spaces for the name, title, and organization of the preparer and the responsible representative of the facility must be provided on the title page in accordance with the signature requirements in 40 CFR 270.11(b).

4.2 Executive Summary

The executive summary must provide a brief summary of the purpose, scope, and results of the monitoring conducted at the subject site during the reporting period. The facility, unit, SWMU, and AOC name(s) and location(s) must be included in the executive summary. In addition, this section must include a brief summary of conclusions based on the monitoring data collected.

4.3 Table of Contents

The table of contents must list all text sections, subsections, tables, figures, and appendices or attachments included in the report. The corresponding page numbers for the titles of each section of the report must be included in the table of contents.

4.4 Introduction

The introduction section must include the facility name and the unit name(s), location(s), and status (e.g. active operations, closed, corrective action). General information on the site usage and status must be included in this section. A brief description of the purpose of the monitoring, type of monitoring conducted, and the type of results presented in the report also must be provided in this section.

4.5 Scope of Activities

A section on the scope of activities must briefly describe all activities performed during the monitoring event or reporting period including field data collection, analytical testing, if applicable, and purge/decontamination water storage and disposal.

4.6 Regulatory Criteria

A section on regulatory criteria must provide information regarding applicable cleanup standards, risk-based screening levels, and risk-based cleanup goals for the site. A table summarizing the applicable cleanup standards, or inclusion of applicable cleanup standards as a column in the data tables, can be substituted for this section. The appropriate cleanup levels for each site must be included if site-specific levels have been established at separate sites. Risk-based evaluation procedures, if used to calculate cleanup levels, must either be included as an attachment or submitted as a separate document and referenced. The specific document and page numbers must be included for all referenced materials.

4.7 Monitoring Results

A section must provide a summary of the results of monitoring conducted at the site. This section must include the dates and times that monitoring was conducted, the measured depths to groundwater, directions of groundwater and vadose zone fluids flow, field air and water quality measurements, static pressures, field measurements, and a comparison to previous monitoring results. Field observations or conditions that may influence the results of monitoring must be reported in this section. Tables summarizing leachate and vapor-monitoring parameters, groundwater and vadose zone fluid elevations, depth-to-water measurements, and other field measurements may be substituted for this section. The tables must include all information required in Permit Section 6.4.11.

4.8 Chemical Analytical Data Results

A section must discuss the results of the chemical analyses. It must provide the dates of sampling and the analytical results. It must also provide a comparison of the data to previous results and to any cleanup standards or established cleanup levels for the site. The rationale or purpose for altering or modifying the sampling program must be provided in this section. A table summarizing the laboratory analytical data, QA/QC data, applicable cleanup levels, and modifications to the sampling program may be substituted for this section. The tables must include all information required in Permit Section 6.4.11.

4.9 Remediation System Monitoring

A section must discuss remediation system monitoring. It must summarize the remediation system's capabilities and performance. It must also provide monitoring data, treatment system discharge sampling requirements, and system influent and effluent sample analytical results. The dates of operation, system failures, and modifications made to the remediation system during the reporting period must also be included in this section. A summary table may be substituted for this section. The tables must include all information required in Permit Section 6.4.11.

4.10 Summary

A summary section must provide a discussion and conclusions of the monitoring conducted at the site. In addition, this section must provide a comparison of the results to applicable cleanup levels and to relevant historical monitoring and chemical analytical data. An explanation must be provided with regard to data gaps. A discussion of remediation system performance, monitoring results, modifications if applicable, and compliance with discharge requirements must be provided in this section. Recommendations and explanations regarding future monitoring, remedial actions, or site closure must also be included in this section.

4.11 Tables

A section must provide the following summary tables for the media sampled. With prior approval from the NMED, the Permittee may combine one or more of the tables. Data presented in the tables must include the current sampling and monitoring data, as well as data from the three previous monitoring events or, if data from less than three monitoring events is available, data

acquired during previous investigations. Remediation system monitoring data also must be presented. The dates of data collection must be included in the tables. Summary tables may be substituted for portions of the text. The analytical data tables must include only detected analytes and data quality exceptions that could potentially mask detections. The following tables must be included, as applicable:

a. a table summarizing the regulatory criteria (a regulatory criteria text section may be substituted for this table or the applicable cleanup levels may be included in the analytical data tables);

b. a table summarizing groundwater and vadose zone fluid elevations, and depths to water data; the table must include the monitoring well depths, casing elevations, the screened intervals in each well, and the dates and times of measurements;

c. a table summarizing field measurements of surface water quality data, if applicable;

d. a table summarizing field measurements of subsurface vapor monitoring and soil moisture data (including historical vapor monitoring data as described above);

e. a table summarizing field measurements of groundwater and vadose zone fluid quality data (including historical water quality data as described above);

f. a table summarizing subsurface vapors chemical analytical data, if applicable (including historical analytical data as described above);

g. a table summarizing surface water chemical analytical data, if applicable (including historical surface water analytical data as described above);

h. a table summarizing groundwater and vadose zone fluid chemical analytical data (including historical groundwater analytical data as described above); and

i. a table summarizing remediation system monitoring data, if applicable (including historical remediation system monitoring data as described above).

4.12 Figures

A section must include the following figures. All figures must include a scale and north arrow. An explanation must be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers. All figures must have a date. The following figures must be included, as applicable:

a. a vicinity map showing topography and the general location of the site relative to surrounding features or properties;

b. a facility site plan that presents pertinent site features and structures, well and piezometer

neutron probe access tubes locations and remediation system location(s) and features; off-site well locations and pertinent features must be included on the site plan, if practical; additional site plans may be required to present the locations of relevant off-site well locations, structures, and features;

c. figures presenting the locations of neutron probe access tubes, monitoring and other well locations, groundwater and vadose zone fluid elevation data, and groundwater and vadose zone fluid flow directions;

d. figures presenting groundwater and vadose zone fluid analytical data for the current monitoring event; the analytical data corresponding to each sampling location may be presented in tabular form on the figure or as an isoconcentration map;

e. figures presenting surface water sampling locations and analytical data for the current monitoring period;

f. figures presenting vertical profiles of soil moisture content for neutron probe measurements for the current monitoring period;

g. figures presenting subsurface vapor sampling locations and analytical data for the current monitoring event; the analytical data corresponding to each sampling location may be presented in table form on the figure or as an isoconcentration map; and

h. figures presenting geologic cross-sections based on outcrop and borehole data, if applicable.

4.13 Appendices

Each monitoring report must include the following appendices. Additional appendices may be necessary to present data or documentation not listed below.

4.13.1 Field Methods

The report must include a section that outlines the methods used to acquire field measurements of groundwater and vadose zone fluid elevations, subsurface vapor, soil moisture, water quality data, subsurface vapor samples, vadose zone fluid samples, and groundwater samples. It must include the methods and types of instruments used to measure depths to water, air, headspace, or subsurface vapor parameters, soil moisture information, and water quality parameters. In addition, decontamination, well purging techniques, well sampling techniques, and sample handling procedures must be provided in this appendix. Methods of measuring and sampling remediation systems must be reported in this section, if applicable. Purge and decontamination water storage and disposal methods must also be presented in this appendix. Copies of purge and decontamination water disposal documentation must be provided in a separate appendix.

4.13.2 Chemical Analytical Program

An appendix must discuss the analytical program. It must include the analytical methods, a summary of data quality objectives, and data quality review procedures. A summary of data quality exceptions and their effect on the acceptability of the analytical data with regard to the monitoring event and the site status must be included in this appendix along with references to case narratives provided in the laboratory reports.

4.13.3 Chemical Analytical Reports

An appendix must include all laboratory chemical analytical data generated for the reporting period. The data may be submitted electronically on a compact disc in Microsoft Excel or other format acceptable to the NMED. The reports must include all chain-of-custody records and QA/QC results provided by the laboratory. Hard (paper) copies of all chain-of-custody records must be submitted as part of this appendix.

5. Risk Assessment Report

The Permittee must prepare risk assessment reports for sites requiring corrective action at the facility using the format described below. This section provides a general outline for risk assessments and also sets forth the minimum requirements for describing risk assessment elements. In general, interpretation of data must be presented only in the background, conceptual site model, and conclusions and recommendations sections of the reports. The other text sections of the risk assessment report must be reserved for presentation of sampling results from all investigations, conceptual and mathematical elements of the risk assessment, and presentations of toxicity information and screening values used in the risk assessment. The human health and ecological risk assessments must be presented in separate sections, but the general risk assessment outline applicable to both sections is provided below.

5.1 Title Page

The title page must include the type of document, revision number if applicable, the facility name, the unit, SWMU, or AOC name(s), and the submittal date. A signature block providing spaces for the name, title, and organization of the preparer and the responsible representative of the facility must be provided on the title page in accordance with the signature requirements in 40 CFR 270.11(b).

5.2 Executive Summary

The executive summary section must provide a brief summary of the purpose and scope of the risk assessment of the subject site. The executive summary must also briefly summarize the conclusions of the risk assessment. The facility, unit, SWMU, or AOC name(s) and location(s) must be included in the executive summary.

5.3 Table of Contents

The table of contents must list all text sections, subsections, tables, figures, and appendices or attachments included in the risk assessment. The corresponding page numbers for the titles of each unit of the report must be included in the table of contents.

5.4 Introduction

The introduction section must include the facility name, unit name(s) and location(s), and unit status (e.g., active operations, closed, corrective action). General information on the current site usage and status must be included in this section.

5.5 Background

The background section must describe relevant background information. This section must briefly summarize historical site uses including the locations of current and former site structures and features. A labeled figure must be included in the document showing the locations of current and former site structures and features.

5.5.1 Site Description

A section must provide a description of current site topography, features, and structures including a description of drainages, erosional features, current site uses, and other data relevant to assessing risk at the site. Depth to groundwater, vadose zone fluids, and directions of groundwater and vadose zone fluids flow must be included in this section. The presence and location of surface water bodies such as springs or wetlands must be noted in this section. Photos of the site may be incorporated into this section, if desired. Ecological features of the site must be described here, including type and amount of vegetative cover, observed and expected wildlife receptors, and level of disturbance of the site. A topographical map of the site and general vicinity of the site showing habitat types, boundaries of each habitat, and any surface water features must be included in the Figures section of the document.

5.5.2 Sampling Results

A section must include a summary of the history of releases of contaminants, known and possible sources of contamination, and the vertical and lateral extent of contamination present in each media. This section must include summaries of sampling results of all investigations, including site plans (included in the Figures section of the document), showing locations of detected contaminants. This section must reference pertinent figures, data summary tables, and citations for references to previous reports. References to previous reports must include page, table, and figure numbers for referenced information. Summaries of sampling data for each constituent must include the maximum value detected, the detection limit, the 95% UCL of the mean value detected (if applicable to the data set) and whether that 95% UCL of the mean was calculated based on a normal or lognormal distribution. Background values used for comparison to inorganic constituents at the site must be presented in this subsection. The table of background values must appear in the Tables section of the document and include actual values used as well as the origin

of the values (facility-wide, site-specific, UCL, UTL). This section must also include a discussion of how “non-detect” sample results were handled in the averaging of data.

5.6 Conceptual Site Model

A section must present the conceptual site model. It must include information on the expected fate and transport of contaminants detected at the site. This section must provide a list of all sources of contamination at the site. Sources that are no longer considered to be ongoing but represent the point of origination for contaminants transported to other locations must be included. The discussion of fate and transport must address potential migration of each contaminant in each medium, potential breakdown products and their migration, and anticipated pathways of exposure for human or ecological receptors. Diagrammatic representations of the conceptual site model must appear in the Figures section of the document.

For human health risk assessments, the conceptual site model must include residential land use as the future land use for all risk assessments. In addition, site-specific future land use may be included, provided that written approval to consider a site-specific future land use has been obtained from the NMED prior to inclusion in the risk assessment. If a site-specific future land use scenario appears in the risk assessment, all values for exposure parameters and the source of those values must be included in table format and presented in the Tables section of the document.

Conceptual site models presented for ecological risk assessments must identify assessment endpoints and measurement receptors for the site. The discussion of the model must explain how the measurement receptors for the site are protective of wildlife receptors.

5.7 Risk Screening Levels

A section must present the actual screening values used for each contaminant for comparison to all human health and ecological risk screening levels. A discussion of the methods used to calculate the screening levels in accordance with Permit Section 3.5 and any variances from those procedures must be included in this Section. If no valid toxicological studies exist for the receptor or contaminant, the contaminant and receptor combination must be addressed using qualitative methods. If an approved site-specific risk scenario is used for the human health risk assessment, this section must include all toxicity information and exposure assessment equations used for the site-specific scenario, as well as the sources for that information. Other regulatory levels applicable to screening the site, such as drinking water MCLs, must also be included in this section.

5.8 Risk Assessment Results

This section must present all risk values, Hazard Quotients (HQs), and Hazard Indices (HIs) for human health under projected future residential scenario and any site-specific scenarios. This section must also present the HQ and HI for each contaminant for each ecological receptor. IN

addition, this section must include discussion of qualitative, semi-quantitative, and quantitative uncertainty in the risk assessment and estimate the potential impact of the various uncertainties.

5.9 Conclusions and Recommendations

This section must include an interpretation of the results of the risk assessment and any recommendations for future disposition of the site. This section may include additional information and considerations that the Permittee believes are relevant to the analysis of the site.

5.10 Tables

Data presented in the summary tables must include information on detection limits and significant data quality exceptions. All data tables must include only detected analytes and data quality exceptions that could potentially mask detections. A section must provide the following summary tables, as appropriate. With prior approval from the NMED, the Permittee may combine one or more of the tables:

a. a table presenting background values used for comparison to inorganic constituents at the site; the table must include actual values used as well as the origin of the values (facility-wide, site-specific, UCL, UTL, or maximum);

b. a table summarizing sampling data must include, for each constituent, all detected values above background, the maximum value detected, the 95 percent UCL of the mean value detected (if applicable to the data set), and whether that 95 percent UCL of the mean was calculated based on a normal or lognormal distribution;

c. a table of all screening values used and the sources of those values;

d. a table presenting all risk values, HQs, and HIs under projected future residential scenario;

e. a table presenting all risk values, HQs, and HIs under approved additional site- specific future land use scenario; and

f. a table presenting the HQ and HI for each contaminant for each ecological receptor.

5.11 Figures

This section must present the following figures for each site, as appropriate. With prior approval from the NMED, the Permittee may combine one or more of the figures. All figures must include a scale and a north arrow. An explanation must be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers. The following figures must be included, as applicable:

a. a vicinity map showing topography and the general location of the site relative to surrounding features or properties;

b. for human health risk assessments, a site plan that presents pertinent site features and structures, underground utilities, well locations, and remediation system locations and its details; off-site well locations and other relevant features must be included on the site plan if practical; additional site plans may be required to present the locations of relevant off-site wells, structures, and features;

c. for ecological risk assessments, a topographical map of the site and general vicinity of the site showing habitat types, boundaries of each habitat, and any surface water features; and

d. conceptual site model diagrams for both human health and ecological risk assessments.

5.12 Appendices

Appendices may be included to present additional relevant information for the risk analysis such as the results of statistical analyses of data sets and comparisons of data, ecological checklists for the site, full sets of results of all sampling investigations at the site, or other data as appropriate.

6. Corrective Measures Evaluation

The Permittee must prepare corrective measures evaluations for sites requiring corrective measures using the format described below. This section provides a general outline for corrective measures evaluations and sets forth the minimum requirements for describing corrective measures when preparing these documents. All investigation summaries, site condition descriptions, corrective action goals, corrective action options, remedial options selection criteria, and schedules must be included in the corrective measures evaluations. In general, interpretation of historical investigation data must be presented only in the background sections of the corrective measures evaluations. At a minimum, detections of contaminants encountered during previous site investigations must be presented in the corrective measures evaluations in table format with an accompanying site plan depicting sample locations. The other text sections of the corrective measures evaluations must be reserved for presentation of corrective action-related information regarding anticipated or potential site-specific corrective action options and methods relevant to the project. The general corrective measures evaluation outline is provided below.

6.1 Title Page

The title page must include the type of document, revision number if applicable, the facility name, the unit, SWMU, or AOC name(s), and the submittal date. A signature block providing spaces for the name, title, and organization of the preparer and the responsible facility representative must be provided on the title page in accordance with the signature requirements in 40 CFR 270.11(b).

6.2 Executive Summary

The executive summary must provide a brief summary of the purpose and scope of the corrective measures evaluation to be conducted at the site. The executive summary or abstract must also

briefly summarize the conclusions of the evaluation. The facility, unit, SWMU, or AOC name(s) and location(s) must be included in the executive summary.

6.3 Table of Contents

The table of contents must list all text sections, subsections, tables, figures, and appendices or attachments included in the corrective measures evaluation. The corresponding page numbers for the titles of each section of the report must be included in the table of contents.

6.4 Introduction

The introduction section must include the facility name, unit name(s) and location(s) and unit status (e.g., active operations, closed, corrective action). General information on the current site use and status must be included in this section. A brief description of the purpose of the corrective measures evaluation and the corrective action objectives for the project also must be provided in this section.

6.5 Background

The background section must describe the relevant background information. This section must briefly summarize historical site activities including the locations of current and former site structures and features. A labeled figure must be included in the document showing the locations of current and former site structures and features. The locations of subsurface features such as pipelines, underground tanks, utility lines, and other subsurface structures must be included in the background section and labeled on the site plan.

This section must include contaminant and waste characteristics, a brief summary of the history of contaminant releases, known and possible sources of contamination, and the vertical and lateral extent of contamination present in each medium. This section must include brief summaries of results of previous investigations, including references to pertinent figures, data summary tables, and text in previous reports. References to previous reports must include page, table, and figure numbers for referenced information. Summary tables and site plans showing relevant investigation locations must be referenced and included in the Tables and Figures sections of the document, respectively.

6.6 Site Conditions

6.6.1 Surface Conditions

A section on surface conditions must describe current and historic site topography, features, and structures, including a description of topographic drainages, man-made drainages, vegetation, and erosional features. It must also include a description of current uses of the site and any current operations at the site. This section must also include a description of those features that could potentially influence corrective action option selection or implementation such as archeological sites, wetlands, or other features that may affect remedial activities. In addition, descriptions of features located in surrounding sites that may have an effect on the subject site regarding sediment transport, surface water runoff, or contaminant transport must be included in

this section. A site plan displaying the locations of all pertinent surface features and structures must be included in the Figures section of the corrective measures evaluation.

6.6.2 Subsurface Conditions

A section on subsurface conditions must describe the site conditions observed during previous subsurface investigations. It must include relevant soil horizon and stratigraphic information, groundwater and vadose zone fluid conditions, fracture data, and subsurface vapor information. A site plan displaying the locations of all borings and excavations advanced during previous investigations must be included in the Figures section of the corrective measures evaluation.

6.7 Potential Receptors

6.7.1 Sources

A section must provide a list of all sources of contamination at the site where corrective measures are to be considered or are required. Sources that are no longer considered to be releasing contaminants at the site, but may be the point of origination for contaminants transported to other locations, must be included in this section.

6.7.2 Pathways

A section must describe potential migration pathways that could result in either acute or chronic exposures to contaminants. It must include such pathways as utility trenches, paleochannels, surface exposures, surface drainages, stratigraphic units, fractures, structures, and other features. The migration pathways for each contaminant and each medium must be tied to the potential receptors for each pathway. A discussion of contaminant characteristics relating to fate and transport of contaminants through each pathway must also be included in this section.

6.7.3 Receptors

A section must provide a listing and description of all anticipated potential receptors that could possibly be affected by the contamination present at the site. Potential receptors must include human and ecological receptors, groundwater, and other potential receptors. This section must identify relevant pathways, such as pathways that could divert or accelerate the transport of contamination to human receptors, ecological receptors, and/or groundwater.

6.8 Regulatory Criteria

A section must set forth the applicable cleanup standards, risk-based screening levels, and risk-based cleanup goals for each medium at the site. The appropriate cleanup levels for each site must be included, if site-specific levels have been established. A table summarizing the applicable cleanup standards must be included as part of the document. Alternately, the report may include applicable cleanup standards as a column in the data tables. If cleanup levels calculated in a risk evaluation are employed, the risk evaluation document must be referenced including pertinent page numbers for referenced information.

6.9 Identification of Corrective Measures Options

A section must identify and describe potential corrective measures for source, pathway, and receptor controls. Corrective measures options must include the range of available options including, but not limited to, a no action alternative, institutional controls, engineering controls, in-situ and onsite remediation alternatives, complete removal, and any combination of alternatives that would potentially achieve cleanup goals.

6.10 Evaluation of Corrective Measures Options

A section must provide an evaluation of the corrective measures options identified in Section 6.6.9 above. The evaluation must be based on the applicability, technical feasibility, effectiveness, implementability, impacts to human health and the environment, and cost of each option. A table summarizing the corrective measures alternatives and the criteria listed below must be included in the Tables section of this document. The general basis for evaluation of corrective measures options is described below.

6.10.1 Applicability

Applicability addresses the overall suitability for the corrective action option for containment or remediation of the contaminants in the relevant media with regard to protection of human health and the environment.

6.10.2 Technical Feasibility

Technical feasibility describes the uncertainty in designing, constructing, and operating a specific remedial alternative. The description must include an evaluation of historical applications of the remedial alternative including performance, reliability, and minimization of hazards.

6.10.3 Effectiveness

Effectiveness assesses the ability of the corrective measure to mitigate the measured or potential impact of contamination in a medium under the current and projected site conditions. The assessment also must include the anticipated duration for the technology to attain regulatory compliance. In general, all corrective measures described above will have the ability to mitigate the impacts of contamination at the site, but not all remedial options will be equally effective at achieving the desired cleanup goals to the degree and within the same time frame as other options. Each remedy must be evaluated for both short-term and long-term effectiveness.

6.10.4 Implementability

Implementability characterizes the degree of difficulty involved during the installation, construction, and operation of the corrective measure. Operation and maintenance of the alternative must be addressed in this section.

6.10.5 Human Health and Ecological Protectiveness

This category evaluates the short-term (remedy installation-related) and long-term (remedy operation-related) hazards to human health and the environment of implementing the corrective measure. The assessment must include whether the technology will create a hazard or increase existing hazards and the possible methods of hazard reduction.

6.10.6 Cost

A section must discuss the anticipated cost of implementing the corrective measure. The costs must be divided into: 1) capital costs associated with construction, installation, pilot testing, evaluation, permitting, and reporting of the effectiveness of the alternative; and 2) continuing costs associated with operating, maintaining, monitoring, testing, and reporting on the use and effectiveness of the technology.

6.11 Selection of Preferred Corrective Measure

The Permittee must propose the preferred corrective measures at the site and provide a justification for the selection in this section. The proposal must be based upon the ability of the remedial alternative to: 1) achieve cleanup standard objectives in a timely manner; 2) protect human and ecological receptors; 3) control or eliminate the sources of contamination; 4) control migration of released contaminants; and 5) manage remediation waste in accordance with State and Federal regulations. The justification must include the supporting rationale for the remedy selection, based on the factors listed in Permit Section 6.6.10, and a discussion of short- and long-term objectives for the site. The benefits and possible hazards of each potential corrective measure alternative must be included in this section.

6.12 Design Criteria to Meet Cleanup Objectives

The Permittee must present descriptions of the preliminary design for the selected corrective measures in this section. The description must include appropriate preliminary plans and specifications to effectively illustrate the technology and the anticipated implementation of the remedial option at the site. The preliminary design must discuss the design life of the alternative and provide engineering calculations for proposed remediation systems.

6.13 Schedule

A section must set forth a proposed schedule for completion of remedy-related activities such as bench testing, pilot testing, construction, installation, remedial excavation, cap construction, installation of monitoring points, and other remedial actions. The anticipated duration of corrective action operations and the schedule for conducting monitoring and sampling activities must also be presented. In addition, this section must provide a schedule for submittal of reports and data to the NMED, including a schedule for submitting all status reports and preliminary data.

6.14 Tables

A section must present the following summary tables, as appropriate. Data presented in the summary tables must include information on dates of sample collection, analytical methods, detection limits, and significant data quality exceptions. All data tables must include only detected analytes and data quality exceptions that could potentially mask detections. The following summary tables must be included in the corrective measures evaluations, as appropriate:

a. a table summarizing regulatory criteria, background, and the applicable cleanup standards;

b. a table summarizing historical field survey location data;

c. tables summarizing historical field screening and field parameter measurements for each media;

d. tables summarizing historical soil, rock, or sediment laboratory analytical data; the summary tables must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

e. a table summarizing historical groundwater elevation and depth to water data; the table must include the monitoring well depths and the screened intervals in each well;

f. tables summarizing historical groundwater and vadose zone laboratory analytical data; the analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

g. tables summarizing historical surface water laboratory analytical data; the analytical data tables must include the analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

h. tables summarizing historical air sample screening and analytical data; the data tables must include the screening instruments used, laboratory analytical methods, detection limits, and significant data quality exceptions that would influence interpretation of the data;

i. tables summarizing historical pilot or other testing data, if applicable, including units of measurement and types of instruments used to obtain measurements;

j. a table summarizing the corrective measures alternatives and evaluation criteria; and

k. a table presenting the schedule for installation, construction, implementation, and reporting of selected corrective measures.

6.15 Figures

This section must present the following figures for each site, as appropriate. All figures must include a scale. All plan view figures must include a north arrow. An explanation must be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers. All figures must contain a date. The following figures must be included, as applicable:

a. a vicinity map showing topography and the general location of the subject site relative to surrounding features or properties;

b. a unit site plan that presents pertinent site features and structures, underground utilities, well locations, and remediation system locations and details; off-site well locations and other relevant features must be included on the site plan if practical; additional site plans may be required to present the locations of relevant off-site well locations, structures, and features;

c. figures showing historical soil boring locations, excavation locations, and sampling locations;

d. figures presenting historical soil sample field screening and laboratory analytical data, if appropriate;

e. figures showing all existing wells including vapor monitoring wells and piezometers; the figures must present historical groundwater elevation data and indicate groundwater flow directions;

f. figures presenting historical groundwater laboratory analytical data including past data, if applicable; the analytical data corresponding to each sampling location may be presented as individual concentrations, in table form on the figure, or as an isoconcentration map;

g. figures presenting historical surface water sample locations and analytical data including past data, if applicable; the laboratory analytical data corresponding to each sampling location may be presented as individual concentrations or in table form on the figure;

h. figures presenting historical air sampling locations and presenting air quality data; the field screening or laboratory analytical data corresponding to each sampling location may be presented as individual concentrations, in table form on the figure or as an isoconcentration map;

i. figures presenting historical pilot or other test locations and data, where applicable, including site plans or graphic data presentation;

j. figures presenting geologic cross-sections based on outcrop and borehole data, if applicable;

k. figures presenting the locations of existing and proposed remediation systems;

l. figures presenting existing remedial system design and construction details; and

m. figures presenting preliminary design and construction details for preferred corrective measures.

6.16 Appendices

Each corrective measures evaluation must include, as appropriate, as an appendix, the management plan for waste, including investigation derived waste, generated as a result of construction, installation, or operation of remedial systems or activities conducted. Each corrective measures evaluation must include additional appendices presenting relevant additional data, such as pilot or other test or investigation data, remediation system design specifications, system performance data, or cost analyses as necessary.

Appendix A-2

Response to Regulatory Comments

(January-March 2021)

Common Comment and Response Worksheet (Version 3)				
Date	**Reviewer**		**Document Title (version)**	**Contract/TO Number**
7/11/2020[a]	**NMED HWB**		**Quarterly Monitoring Report for April-June 2019 Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111 Kirtland Air Force Base, New Mexico**	**NMED Permit No. NM9570024423**
Item	**Section**	**Page**	**Comment**	**Response**
1	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **a.** The response to NMED's comments must be included as Appendix A of each document revision.	The response to New Mexico Environment Department's (NMED's) comments are included as Appendix A-2 beginning with the Quarter 2 (Q2) 2020 Quarterly Report and going forward.
2	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **b.** All field methods for the project must be documented in an appendix, as required by Permit Section 6.2.4.4.11. The documentation must be specific to each monitoring activity, such as soil vapor monitoring, groundwater monitoring, or operation and maintenance of the groundwater treatment system. References to quality assurance project plans (QAPPs), standard operating procedures (SOPs), or work plans are not acceptable. All deviations from approved work plans must be discussed and explained in a Deviations section.	Field methods for the project are included as Appendix B-1 beginning with the Quarter 3 (Q3) 2020 Quarterly Report and going forward. References to QAPPs and SOPs were not included in the field methods appendix. Deviations are discussed in the main text.
3	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **c.** Wells must be consistently referred to by the same name/designation in all periodic reports, sections of the text, tables, and figures. The designations must match those provided in the digital analytical data files.	Wells are referred to consistently throughout this document. A table listing any historical changes to well designations that can be used for cross reference purposes is provided as Appendix B-2 beginning with the Q3 2020 Quarterly Report and going forward.
4	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **d.** Sampling data tables must include the practical quantitation limit (PQL) and listed laboratory report detection limit (RDL) for each analysis.	Since this project is being performed under a Department of Defense (DoD) contract, the laboratory is required to use specific DoD Quality Systems Manual (QSM) reporting limit nomenclature when reporting data. However, the DoD nomenclature is comparable to U. S. Environmental Protection Agency (EPA) method reporting nomenclature. To clarify, beginning with the Q2 2020 report and going forward, an analytical data Excel flat file is being provided in an appendix with each sample matrix type to include the PQL (limit of quantification [LOQ] per DoD), RDL (limit of detection [LOD] per DoD) and MDL (detection limit [DL] per DoD). See response to comment 8 below.
5	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **e.** Sampling data tables must include the appropriate screening levels for data comparison.	Sampling data tables will include the relevant appropriate screening levels. As discussed in Section 2, soil vapor results were compared to vapor intrusion screening levels (VISLs) at the 25-foot depth interval. Soil vapor data tables listing results for deeper soil vapor monitoring points (SVMPs) are not compared to VISLs.
6	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **f.** Analytical data tables in digital format must include a column that indicates which analytical data report the specific sample information can be found. This link must correspond to the analytical data report file name.	Analytical data flat files in Excel are being provided in the appendices (see response to comment 8 below) and include a column which identifies the analytical laboratory data report file name where the specific sample information can be located.
7	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **g.** Data quality exceptions, such as when the PQL exceeds the corresponding screening level, must be identified as such in all tables and figures (see Permit Section 6.5.18).	Exceedances of the PQL are provided in the sortable, searchable Excel tables provided as appendices in the Q2 2020 report and future reports (see response to comment 8 below). Beginning in the Q3 2020 quarterly report, a discussion and table of PQL exceedances above the corresponding screening level where the analytical result is estimated (J-flagged) are included in the Data Quality Evaluation Report appendices to the Quarterly Report. The exceptions will also be noted on figures beginning in the Q3 2020 quarterly report.
8	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **h.** Analytical data provided in digital format such as Microsoft Excel or Access files must be provided in a sortable, searchable format. Previous reports have provided digital data in the same format as the printed tables. These tables are not sortable or searchable. Provide the tables in a standard database format.	Beginning in the Q2 2020 quarterly report and going forward, analytical data tables provided as appendices will be provided in a sortable, searchable standard database format (Excel). The tables being provided can be found in appendices titled: Soil Vapor Analytical Data (Q2 and Q4 reports only) Groundwater Analytical Data Drinking Water Supply Well Analytical Data Groundwater Treatment System Performance Analytical Data

Common Comment and Response Worksheet (Version 3)				
Date	**Reviewer**		**Document Title (version)**	**Contract/TO Number**
7/11/2020[a]	**NMED HWB**		**Quarterly Monitoring Report for April-June 2019 Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111 Kirtland Air Force Base, New Mexico**	**NMED Permit No. NM9570024423**
Item	**Section**	**Page**	**Comment**	**Response**
9	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **i.** Analytical data packages must be submitted in accordance with KAFB Permit Section 6.5.18.2, Laboratory Deliverables.	Beginning in the Q3 2020 quarterly report and going forward, EPA Level II data packages will be provided with the report, and Levels III and IV will be maintained and available to NMED upon request in accordance with Resource Conservation and Recovery Act (RCRA) Permit Section 6.5.18.2 (see response to Item 20 below).
10	General Comments	1	**1. Monitoring Report Contents** **NMED Comment:** Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable**:** **j.** All tables, figures, and appendices must be appropriately numbered and titled.	Tables, figures, and appendices will be appropriately numbered and titled in this document. Headers and footers with appropriate page numbering and titles will be applied to all figures, tables, and appendices.
11	General Comments	1	**1. Monitoring Report Contents** **NMED Comment**: Based on the issues identified in this report and other periodic reports, NMED is providing the following reporting requirements which the Permittee must incorporate into future reports. Permittee is required to include the following as applicable: **k.** Every page of every submittal, including all pages within all sections and appendices, must be numbered either sequentially or in some other format acceptable to NMED.	See response to item 10 above.
12	General Comments	2	**2. Analytical Data Detection and Quantitation Limits** **NMED Comment:** (Paragraph 1) Many of the analytical data tables presented in the Report list the limit of detection (LOD) for each sample analysis, however, it is not clear if this value represents the laboratory method detection limit or reporting detection limit. Some tables list the LOD and some the limit of quantification (LOQ). The permittee must provide the method detection limit (MDL) in the data tables. In addition, the Permittee must include the reporting detection limit (assuming this is the Permittee's "LOD") and the PQL (assuming this is the Permittee's "LOQ") for each sample analyzed in the data tables.	As noted in Comment 4 above, the required laboratory reporting is per contract required DoD QSM reporting requirements. For clarification, the DoD DL is equivalent to the EPA MDL, the DoD LOD is equivalent to the EPA RDL, and the DoD LOQ is equivalent to the EPA PQL. To further clarify this, we have included an analytical data Excel flat file in an appendix with each sample matrix type to show the specific PQL, RDL, and MDL for each sample analyte.
13	General Comments	2	**2. Analytical Data Detection and Quantitation Limits** **NMED Comment:** (Paragraphs 2 and 3) The Permittee's Quality Assurance Project Plans (QAPPs) indicate that the Permittee is using three different variations of terminology for method reporting limits, including one which seems to be backwards. The Permittee's QAPP for Vadose Zone Treatability Studies Attachment 1, Tables 1-1a, Method Reporting Limits – Drinking Water, 1-1b, Method Report Limits – Soil and Investigation Derived Waste, and 1-1c, Method Reporting Limits – Volatile Organic Compounds in Air, all seeming use the LOQ appropriately (as the PQL), but there is a lack of consistency between the method detection limit and reporting detection limit. In Table 1-1a, Drinking Water, "MDL" appears to equate to the method detection limit, and "LOD" appears to equate to the reporting detection limit. In Table 1-1b, Soil, "LOD" appears to equate to the method detection limit and "DL" appears to equate to the reporting detection limit. Based on the fact that the PQL must be greater than the reporting detection limit and the reporting detection limit must be greater than the method detection limit, Table 1-1b, Soil, appears to be wrong. NMED is assuming that similar tables appear in the QAPP for quarterly monitoring.	The Vadose Zone Treatability QAPP includes method reporting limit tables for TestAmerica, Inc. Laboratories for drinking water, soil coring and investigation-derived waste, and soil vapor. It appears on the reporting limit table 1-1b, Soil, the values in the LOD and DL columns were inadvertently switched. It is correct that the LOQ/PQL is greater than the LOD/RDL, which is greater than the DL/MDL. The reporting limit tables in the QAPP for the Dissolved-Phase Plume and Groundwater Treatment System Design (quarterly groundwater monitoring), Attachment 1 (Eurofins Lancaster Laboratories) are confirmed to be correct.
14	General Comments	2	**2. Analytical Data Detection and Quantitation Limits** **NMED Comment:** (Paragraph 4) These issues [items 12 and 13 above] cause confusion for the reviewer, community stakeholders, and the public, and increases the time required to review submittals from the Permittee. The Permittee must use appropriate and consistent terms for Quality Assurance/Quality Control in all periodic reporting submittals and for all media (e.g., use MDL consistently instead of DL). While NMED does not review or approve QAPPs, the Permittee must assure that they are providing their contractors with the appropriate information to provide appropriate, consistent, and accurate information to NMED. Consistency in reporting by the Permittee will reduce both agency and Air Force internal review times.	See responses to items 12 and 13 above.

Common Comment and Response Worksheet (Version 3)				
Date	**Reviewer**		**Document Title (version)**	**Contract/TO Number**
7/11/2020[a]	**NMED HWB**		**Quarterly Monitoring Report for April-June 2019 Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111 Kirtland Air Force Base, New Mexico**	**NMED Permit No. NM9570024423**
Item	**Section**	**Page**	**Comment**	**Response**
15	Specific Comments	2/3	**3. Table of Contents, Appendix B, page iv:** **NMED Comment:** Appendix B, New Activities Supporting Information, contains well completion reports for four new wells installed and developed in accordance with the NMED-approved 2017 Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling. KAFB Permit Section 6.2.2.1.2, Site Investigations – Investigation Reports, and Section 6.2.4.3, Reporting Requirements – Investigation Reports, require that the information and data collected from all investigation activities conducted during the quarter be submitted to NMED as separate, stand-alone reports. The Permittee must submit individual reports for all investigation activities conducted in support of the ongoing investigation of the Bulk Fuels Facility spill, rather than submit the information as appendices in quarterly reports.	The information and data collected from investigation activities, such as well completion reports, will be provided as stand-alone reports or as otherwise required by NMED and will not be provided as appendices to quarterly reports.
16	Specific Comments	3	**4. Section 2.5 Q2 2019 Soil Vapor Data, page 2-4:** **Permittee Statement:** "The RCRA permit does not specify cleanup levels for soil vapor. The quarterly reports are not intended to assess risk; the vapor data are used to assess concentration trends. The risk assessment (USACE, 2017e) compares vapor concentrations to the vapor intrusion screening levels in the NMED Risk Assessment Guidance for Site Investigations and Remediation. All EDB and benzene concentrations are compared against 3,800 and 3,200 micrograms per cubic meter (µg/m3), respectively. HC concentrations are compared against 1,000 parts per million by volume (ppmv). The comparison concentrations used in this report were determined by historical maximum and minimum soil vapor results to show which SVMPs had relatively high or low concentrations." **NMED Comment:** The Permittee must clarify if the comparison values for EDB, benzene, and HC represent the historical maximum or minimum, or some other calculated value so that changes relative to the values can be evaluated. The Permittee must also provide a reference for the historical soil vapor values. The Permittee accurately states that quarterly reports are not intended to assess risk; however, the Permittee must provide a comparison of detected concentrations to a regulatory standard for the purpose of assessing the presence and location of contaminants of concern. NMED's Risk Assessment Guidance for Site Investigations and Remediation (2019 and as updated) vapor intrusion screening levels (VISLs) must be used a first-tier screening assessment.	In the Q2 2020 report, language was revised to clarify that the comparison values were set based on a qualitative analysis of soil vapor data in Q2 2016 to help the reader distinguish areas of relatively high or low soil vapor concentrations (Section 2.3). They were not intended to be screening levels, rather their purpose is as a helpful tool for the reader to evaluate trends. Comparison levels were removed from the report beginning in Q4 2020. Beginning in Q4 2020, NMED's Risk Assessment Guidance for Site Investigations and Remediation (2019 and as updated) VISLs were used as a first-tier screening assessment. NMED VISLs were calculated utilizing EPA default attenuation factors which are based on conservative assumptions and empirical data. VISLs are intended to be screened against soil vapor samples collected from below building foundations (sub slab samples). However, the shallowest SVMPs at SWMUs ST-106/SS-111 are screened from 15 to 25 feet (ft) below ground surface. Therefore, using NMED VISLs as a first-tier screening level for soil vapor concentrations at the 25 ft horizon provides a conservative estimate. NMED VISLs are not appropriate screening levels for deeper SVMPs. Kirtland AFB is currently in coordination with USACE-Albuquerque District to determine the most appropriate screening criteria for evaluating soil vapor at depth at the Kirtland Bulk Fuels Facility. Pending resolution, data will be screened in the manner indicated above in future reports. Table 3-6 includes the results of screening the 25-ft horizon against residential soil gas VISLs. This screening is for comparison purposes only and should not be considered an evaluation of exposure or risk.
17	Specific Comments	3	**5. Section 2.2. Bioventing Pilot Test, page 2-2** **Permittee Statement:** "A bioventing report will be submitted on January 31, 2020 as requested by NMED in a letter dated February 25, 2019 (NMED, 2019). This report will include data collected up to Q4 2019. Data collected after Q4 2019 will be provided in the relevant quarterly monitoring reports. The Q4 2020 Quarterly and Annual Monitoring Report will include results to date, and the final results of the bioventing pilot test will be provided in the Q4 2021 Quarterly and Annual Monitoring Report." **NMED Comment:** Bioventing pilot test data is collected each quarter; therefore, the Permittee must provide quarterly data updates in separate quarterly status reports specific to the bioventing pilot study to allow NMED to provide timely adjustment and inputs to the bioventing system. The final results of the bioventing pilot test must be submitted as a stand-alone document rather than as an appendix to the Q4 2021 Quarterly and Annual Monitoring Report.	Future bioventing reports will be removed from quarterly reports. The final results of the bioventing pilot test will be submitted as a stand-alone document.

Common Comment and Response Worksheet (Version 3)				
Date	**Reviewer**		**Document Title (version)**	**Contract/TO Number**
7/11/2020[a]	**NMED HWB**		**Quarterly Monitoring Report for April-June 2019 Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111 Kirtland Air Force Base, New Mexico**	**NMED Permit No. NM9570024423**
Item	**Section**	**Page**	**Comment**	**Response**
18	Specific Comments	3	**6. Section 3.3.1 Sampling Deviations, page 3-3** **Permittee Statement:** "Groundwater samples were not obtained from seven wells in Q2 2019. Three wells (KAFB-106001, KAFB-106008, and KAFB-106079) could not be sampled due to suspected biofouling. These wells will be sampled using passive sampling techniques in the future after well rehabilitation is evaluated." **NMED Comment:** The Permittee must provide additional information in a subsequent quarterly report on suspected biofouling of wells KAFB-106001, KAFB-106008, and KAFB-106079, such as evidence for biofouling, the source of biofouling, and the date when biofouling was first suspected. Well KAFB-106079 is less than 1000 ft from interim measure extraction well KAFB-106239. Provide information on the potential for suspected biofouling at KAFB-106079 to impact KAFB-106239 and the Groundwater Treatment System. The Permittee must also submit a work plan for evaluating and conducting rehabilitation of the three wells. Use of passive sampling techniques for wells KAFB-106001 and KAFB-106079 is contingent upon NMED approval. Because LNAPL was previously detected in well KAFB-106008, use of passive sampling is not appropriate.	The following additional information on suspected biofouling of wells KAFB-106001, KAFB-106008, and KAFB-106079, along with a discussion of the potential for biofouling at KAFB-106239, is provided only in this response to comments table, as this was not part of Q3 2020 groundwater monitoring activities discussed in the main text of this quarterly report. A similar discussion will be included in future quarterly reports for wells suspected of biofouling during the relevant quarter. During the Q2 2019 groundwater sampling event, the sampling team was unable to purge wells KAFB-106001, KAFB-106008, and KAFB-106079. Sampling was attempted at these three wells on May 1, April 23, and April 26, 2019, respectively. The pumps were removed, and biologic films were observed on the pump screens. The biologic films were thick enough to prevent water from entering the screens. The screens were cleaned, and another attempt to pump was made; however, the biologic material occluded the screens again, preventing water from entering the pump. These wells were disinfected in Q3 2019 in accordance with the approved procedures (see paragraph below), and disinfection was reported in the Q3 2019 Quarterly Report. These three wells are in areas with historically high benzene, toluene, ethylbenzene, and total xylenes concentrations and anaerobic conditions. As discussed in Section 7 of the Phase I RCRA Facility Investigation Report (Kirtland AFB, 2018, *Phase I RCRA Facility Investigation Report, Bulk Fuels Facility Releases, Solid Waste Management Unit ST-106/SS-111*, prepared by Sundance Consulting, Inc. for Kirtland AFB under USACE-Albuquerque District Contract No. W912PP-16-C-0002. August), concentrations of microbial indicator compounds suggest that microbial degradation is occurring in this area. KAFB-106239 experiences a periodic decrease in pumping rates, which is an indicator of biofouling. When this occurs, it is disinfected in accordance with approved procedures (see paragraph below), and disinfection is discussed in the relevant quarterly report. Standard well disinfection procedures were provided in the Operation and Maintenance Plan (Kirtland AFB. 2016. Operations and Maintenance Plan, Groundwater Treatment System, Bulk Fuels Facility, SWMUs ST-106/SS-111, Kirtland Air Force Base, New Mexico.), which was approved by NMED in a letter dated December 12, 2016 (Correspondence from Kathryn Roberts, Director, Resource Protection Division to Colonel Eric H. Froehlich, Base Commander, Kirtland AFB, New Mexico, and Mr. John Pike, Director, Environmental Management Division, 377 MSG, Kirtland AFB, New Mexico, re: Operation and Maintenance Plan, Groundwater Treatment System, Bulk Fuels Facility Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, EPA ID No. NM9570024423, HWB-KAFB-13-MISC.). Disinfection of these wells took place in September 2019 and was reported on in the Q3 2019 quarterly report. Wells KAFB-106001, KAFB-106079, and KAFB-106008 will be sampled using portable pumps in future monitoring quarters until such time as passive sampling is approved by NMED.
19	Specific Comments	4	**7. Section 3.6.1.1 EDB Analytical Results, page 3-5** **Permittee Statement:** "Five EDB exceedances were from wells north of Ridgecrest Drive SE but none were north of Gibson Boulevard SE." **NMED Comment:** Figures 3-5 and 3-6 present EDB concentrations in groundwater for reference elevation 4857 and 4838, respectively. Both figures depict the northern extent of the EDB plume as being north of Gibson Boulevard SE. The Permittee must revise the statement and figures for accuracy if they are included in future periodic reports.	The Permittee statement from the Q2 2019 report was verified as accurate. While some wells north of Gibson Boulevard SE (Gibson) had EDB detections, there were no EDB exceedances above the EPA MCL of 0.05 micrograms per liter in wells sampled north of Gibson in Q2 2019. Because some of the wells with exceedances were immediately south of Gibson, interpolation of the plume boundary shows the northern boundary extending approximately 100 ft to the north of Gibson. However, no wells located north of Gibson are included within the plume boundary.

[a]The date was incorrectly recorded as 7/11/2019 on the letter.

Date	Reviewer		Document Title (version)	Contract/TO Number
9/2/2020	NMED HWB		**Reporting Requirements for All Document Submittals Kirtland Air Force Base, New Mexico EPA ID # NM6213820974 HWB-KAFB-20-MISC**	**NMED Permit No. NM9570024423**
The following items address comments provided in the September 2, 2020 letter that were not addressed by the July 11, 2020 letter. Comments 3 and 4 did not require edits to Periodic Monitoring Reports. Comments 5, 6, 7, 8a through 8f, 8i through 8k, and 9 were addressed by the July 11, 2020 letter.				
Item	**Section**	**Page**	**Comment**	**Response**
1	Letter	2	**1. Laboratory Deliverables:** Section 6.5.18.2, Laboratory Deliverables, of the KAFB Resource Conservation and Recovery Act (RCRA) Permit (KAFB Permit), states the requirements for analytical laboratory reporting. The section states, "[l]aboratory analytical data packages shall be prepared in accordance with EPA-established Level III or IV analytical support protocols." The final paragraph of the permit section goes on to state, "[t]he Permittee shall present summary tables of these data and Level II QC results to the Department in reports or other documents prepared in accordance with Permit Section 6.2.4. Raw analytical data, including calibration curves, instrument calibration data, data calculation work sheets, and other laboratory supporting data for samples from this project, shall be compiled and kept on file at the Facility for reference. The Permittee shall make all data available to the Department upon request." Therefore, for purposes of reporting, Level II Qc results are necessary. Level III and IV data must be maintained by the Permittee to be made available upon request.	This comment clarifies Item 9 above. Beginning with the Q3 2020 Quarterly Report and going forward, Level II rather than Level IV data packages will be provided with the report, and Level III and Level IV will be available upon request.
2	Letter	2	**2. General Guidelines:** NMED has included an attachment titled *General Reporting Guidelines* that provides guidance regarding its expectations of submittals to the Hazardous Waste Bureau. The Permittee must consult the guidance during document preparation.	Section 4 of the *General Reporting Guidelines*, Periodic Monitoring Report, was consulted during the preparation of the Q3 2020 Quarterly Report, and revisions were made as discussed in Items 7 and 8 below.
5	Letter	3	**8. Data Tables, Figures, and Appendices** **g.** Data in tables and figures must be presented with a consistent and appropriate number of significant figures.	Significant figures provided are reviewed to ensure they are appropriate to the task and the level of precision attainable by the instruments used.
6	Letter	3	**8. Data Tables, Figures, and Appendices** **h.** All points (wells), structures, infrastructure, roads, etc. depicted on figures must be labeled.	Figures are reviewed to ensure that the relevant wells, structures, infrastructure, roads, etc. are labeled or described in the legend.
7	General Reporting Guidelines	17	**Section 4.11 Tables** The following tables must be included, as applicable: **b**. a table summarizing groundwater and vadose zone fluid elevations, and depths to water data; the table must include the monitoring well depths, casing elevations, the screened intervals in each well, and the dates and times of measurements.	Beginning in Q3 2020, Table 3-2, Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, was revised to include well depth, bottom of screen, and measurement times. The other required information, including top of screen, was already present in the table.
8	General Reporting Guidelines	17	**Section 4.11 Tables** The following tables must be included, as applicable: **e.** a table summarizing field measurements of groundwater and vadose zone fluid quality data (including historical water quality data as described above).	A table summarizing field measurements, including historical water quality data, was added to Appendix E-3. In Q2 and Q4 of each year, a table summarizing field measurements from the current sampling event will continue to be provided (Table 3-5 in the Q2 2020 report).

Acronyms:

µg/m^3	micrograms per cubic meter
AFB	Air Force Base
DL	detection limit
DoD	Department of Defense
EDB	1,2-dibromoethane (ethylene dibromide)
EPA	U.S. Environmental Protection Agency
ft	foot/feet
HC	hydrocarbons
HWB	Hazardous Waste Bureau
ID	Identification
LNAPL	light non-aqueous phase liquid
LOD	limit of detection
LOQ	limit of quantitation
MCL	maximum contaminant level
MDL	method detection limit
NMED	New Mexico Environment Department
ppmv	parts per million by volume
PQL	practical quantitation limit
Q1	first quarter
Q2	second quarter
Q3	third quarter
Q4	fourth quarter
QAPP	quality assurance project plan

QSM	Quality Systems Manual
RCRA	Resource Conservation and Recovery Act
RDL	report detection limit
SE	southeast
SOP	standard operating procedure
SVMP	soil vapor monitoring point
SWMU	solid waste management unit
TO	task order
USACE	U.S. Army Corps of Engineers
VISL	vapor intrusion screening level

Appendix A-3

Crosswalk Table between RCRA Permit Requirements and the Periodic Monitoring Report (January-March 2021)

The Permit Requirement	Report Location
RCRA Permit No. NM9570024423– Section 6.2.4.4, Periodic Monitoring Reports	
1. Title Page and Signature Block (for the name, title and organization of the preparer and the responsible Facility representative)	Following the cover page.
2. Executive Summary (Abstract)	Abstract provided on Report Documentation Page. Executive Summary provided as pages ES-1 and ES-2.
3. Table of Contents	Pages i through vi
4. Introduction	Section 1
5. Scope of Activities	Section 2
6. Regulatory Criteria	Section 3
7. Monitoring Results	Section 4
8. Conclusions and Recommendations	Section 7
9. Tables - include explanation for all abbreviations, symbols, acronyms, and qualifiers	Tables section follows the Figures section, with explanations provided for each table. Each table includes notes which provide explanations of the abbreviations, symbols, acronyms, and qualifiers used.
10. Figures (1) - map figures include accurate bar scale and north arrow	Figures section follows the report text. Map figures include accurate bar scales and north arrows.
10. Figures (2) - non-map figures include a bar scale if appropriate	Non-map figures include a bar scale where appropriate.
10. Figures (3) - all figures include an explanation for abbreviations, symbols, acronyms and qualifiers	Figures include explanations and notes for abbreviations, symbols, acronyms, and qualifiers.
11. Appendices (1) - field methods	Appendix B-1.
11. Appendices (2) - boring/test pit logs and well construction diagrams	Not applicable to Q1 2021.
11. Appendices (3) - chemical analytical reports	Groundwater Monitoring (GWM): Appendix D-3 Drinking Water Supply Wells: Appendix F-2 Groundwater Treatment System (GWTS) Operation and Performance: Appendix G-5
11. Appendices (4) - Other appendices as required by NMED	Other Appendices required by NMED are provided.
Discharge Permit DP-1839	
Terms and Conditions #17 – 24	Table 5-1 gives the relevant text references where each of these conditions is addressed.
RCRA Permit No. NM9570024423– Section 6.2.4.1, Quarterly Reporting	
1. A description of the work completed and an estimate of the percentage of total planned work completed.	Section 2
2. Summaries of all findings, including summaries of laboratory data.	Provided for each task: GWM: Section 4.1, Tables 4-2 through 4-10 Drinking Water Supply Well Monitoring: Section 4.2, Table 4-11 GWTS Operation and Performance: Section 5, Tables 5-2 through 5-10.
3. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems.	Provided for each task: Gauging deviations: Section 4.1.2.2 Groundwater sampling deviations: Section 4.1.3.1.
4. Planned work for the next reporting period.	Section 6.3
5. Summaries of contacts pertaining to corrective action with representatives of the local community, public interest groups, or State government during the reporting period.	Regulatory correspondence is provided in Appendix A-1, and response to regulator comments is provided in Appendix A-2.
6. Changes in key project personnel during the reporting period.	Not applicable in Q1 2021.
7. Summaries of any variances from approved investigation or remediation work plans.	Provided for each task: Gauging deviations: Section 4.1.2.2 Groundwater sampling deviations: Section 4.1.3.1.
8. Brief summaries of any periodic monitoring reports prepared in accordance with the requirements in Permit Section 6.2.4.4.	Executive Summary Section 1 Section 7.

APPENDIX B-1

FIELD METHODS

LIST OF ACRONYMS AND ABBREVIATIONS

%	Percent
AFB	Air Force Base
CFR	Code of Federal Regulations
DMS	dual membrane sampler
DO	dissolved oxygen
ft	foot/feet
GWM	groundwater monitoring
GWTS	groundwater treatment system
IDW	investigation-derived waste
LNAPL	light non-aqueous phase liquid
NMED	New Mexico Environment Department
No.	Number
ORP	oxidation reduction potential
Permit	Hazardous Waste Treatment Facility Operating Permit Number NM9570024423
PID	photoionization detector
psi	pound(s) per square inch
Q1	first quarter
RCRA	Resource Conservation and Recovery Act

B-1.1 FIELD EQUIPMENT USED IN MULTIPLE SETTINGS

During the first quarter (Q1) 2021, field equipment was calibrated and maintained in accordance with the Part 6.5.4 of Resource Conservation and Recovery Act (RCRA) Hazardous Waste Treatment Facility Operating Permit Number (No.) NM9570024423 (Permit) (New Mexico Environment Department [NMED], 2010), and decontaminated where applicable in accordance with Part 6.5.3.

B-1.1.1 PHOTOIONIZATION DETECTOR

Headspace air quality measurements were collected each time a groundwater monitoring (GWM) well was opened to ensure a safe working environment. Headspace was monitored using a photoionization detector (PID) reading total volatile organic compounds in parts per million volume. During use, each PID was calibrated in accordance with the manufacturer's instructions weekly and bump tested daily. The PID was calibrated when the results of the bump test fell outside of the accepted range.

B-1.1.2 WATER QUALITY METERS

Water quality measurements were collected as part of multiple sampling events, including GWM, drinking water production well monitoring, and sampling at the groundwater treatment system (GWTS). A multiparameter meter equipped with both a flow-through cell and a sample cup for use in various settings was used to measure temperature, dissolved oxygen (DO), specific conductance, pH, and oxidation reduction potential (ORP). During the sampling event, each multiparameter meter was calibrated in accordance with the manufacturer's instructions weekly and bump tested daily. When the results of the bump test fell outside of the accepted range, the instrument was calibrated. A separate turbidimeter was used to measure turbidity. While it was in use, the turbidimeter was calibrated at the beginning of the quarter and bump tested weekly. When the results of the bump test fell outside of the accepted range, the instrument was calibrated.

B-1.1.3 LIQUID LEVEL INDICATORS

Liquid levels were measured to the nearest 0.01 foot (ft) using an oil-water interface probe of appropriate length based on historical water levels. Individual interface probes were dedicated to a group of wells with similar historical analytical results to reduce the risk of cross-contamination. In addition, interface probes were decontaminated between wells to further minimize the risk of cross-contamination.

B-1.2 FIELD METHODS USED IN MULTIPLE SETTINGS

B-1.2.1 OPENING GROUNDWATER MONITORING WELLS

GWM wells were opened during synoptic gauging, groundwater sampling, and in conjunction with other periodic activities as needed (i.e., well rehabilitation). Field teams donned personal protective equipment appropriate to the task prior to opening well vaults, removed the bolts, and carefully set the vault lid to the side. In wells that did not contain dedicated equipment, the well cap was unscrewed and set to the side. In wells that did contain dedicated equipment, the stopper was removed from the drop pipe and set to the side. The PID was used to determine the total volatile organic compounds at the top of the well to ensure a safe working environment. When the headspace reading was greater than 5.0 parts per million by volume in the breathing zone, fieldwork at that location was conducted using an air purifying respirator.

B-1.2.2 GAUGING LIQUID LEVELS

Liquid levels were measured in accordance with the requirements in Part 6.5.17.2 of the RCRA Permit (NMED, 2010). Liquid levels were measured during the synoptic gauging event, in conjunction with groundwater sampling as needed, and in conjunction with other periodic activities as needed (i.e., well rehabilitation). Interface probes were decontaminated prior to use. The interface probe was deployed in the well, and depth to light non-aqueous phase liquid (LNAPL) (if applicable) and water was measured to the individual well's measuring reference point, the top of the well vault, using a straight edge placed across the vault.

B-1.2.3 SAMPLE SHIPPING

Samples were shipped in accordance with the requirements in Part 6.5.5.2 of the RCRA Permit (NMED, 2010). Samples were shipped in coolers with ice for groundwater sampling, drinking water sampling, and GWTS sampling. If the cooler had a spout, it was duct taped shut. The cooler was then lined with two plastic bags. Samples were surrounded by ice in the interior bag, and temperature blanks and trip blanks were included as required. The bags were then sealed shut, chain-of-custody forms were attached to the lid within a sealed plastic bag, and the cooler was sealed using packing tape with custody seals attached on opposing corners. Samples were shipped overnight to ensure arrival at the lab at the required temperature.

B-1.2.4 FIELD PARAMETER MEASUREMENTS

Field parameters were collected in accordance with the requirements in Part 6.2.2.1 of the RCRA Permit (NMED, 2010).

B-1.2.4.1 Field Parameter Measurements Using a Flow-Through Cell

Field parameters were measured using a flow-through cell for GWM low-flow sampling and monthly GWTS sampling. The multiparameter meter probe was placed into the flow-through cell, and purge water entered the cell through the bottom and exited through the top into the required sample container to be held in the appropriate investigation-derived waste (IDW) yard pending disposal at the GWTS or analysis, depending on the historical analytical results from the sample location. The multiparameter meter displayed instantaneous measurements that updated as the chemistry of the water flowing through the cell changed. Data were recorded on a field form at the frequency required for the activity.

B-1.2.4.2 Field Parameter Measurements Using a Sample Cup

Field parameters were measured using a sample cup for drinking water sampling and in conjunction with other periodic activities as needed (i.e., well development). The sample cup was filled from the sampling port, and the multiparameter meter probe was inserted into the sample cup. Once the readings stabilized, they were recorded on a field form.

B-1.3 SYNOPTIC GAUGING

Synoptic gauging was conducted in accordance with the requirements in Part 6.5.17.2 of the RCRA Permit (NMED, 2010).

B-1.3.1 METHODS

Depths to groundwater and LNAPL were measured in Q1 2021 during a 3-day synoptic gauging event. Interface probes were decontaminated prior to the start of the synoptic gauging event and between wells. Field forms were used to record the depth to water and LNAPL (where applicable), date, time, and interface probe used. Prior to gauging, the interface probes designated for use were used to measure depths to water in three GWM wells located south of the source area (KAFB-106027, KAFB-106044, and KAFB-106045) to quantify any measurement difference from a control probe. Over a 3-day period, barometric pressure changes at the site can cause water levels in a given well to vary by up to 0.15 ft, even after diurnal variations are taken into account. This was determined by observing the change in water levels due to barometric pressure at three wells during a 7-day background monitoring period prior to aquifer testing at KAFB-106228 (Kirtland Air Force Base [AFB], 2016). Therefore, a measurement difference between probes of up to 0.03 ft, or less than 20 percent (%) of 0.15 ft, is negligible as compared to these naturally occurring changes. If a probe consistently measured greater than 0.03 ft different from the control probe, water levels taken using that probe were corrected by the value of the difference. Water levels were compared to the previous quarter, and professional judgement was used to determine wells that required re-gauging.

B-1.4 GROUNDWATER SAMPLING

Groundwater was sampled in accordance with the requirements in Part 6.5.17.2 of the RCRA Permit (NMED, 2010) and subsequent NMED approval to use passive sampling methods in select wells (NMED, 2017a). Sample aliquots that were sent to the laboratory for dissolved metals analysis were filtered in the field immediately after collection through a disposable filter with a 0.45-micron nominal pore size, in accordance with the requirements in Part 6.5.17.5 of the RCRA Permit (NMED, 2010).

B-1.4.1 PASSIVE SAMPLING

B-1.4.1.1 Equipment Used

Passive sampling was conducted using dual membrane samplers (DMSs) attached to a tether dedicated to the individual well. Each tether was equipped with a series of rings that the DMSs are attached to beginning at the top of screen depth, and continuing every 2.6 ft, with the lowest ring positioned 2.6 ft above the bottom of the screen. Interface probes and PIDs were also used during passive sampling.

B-1.4.1.2 Methods

Deployment

Each DMS was deployed a minimum of 3 weeks prior the planned sampling date. If the screened interval of the well was partially submerged or submerged by less than 5 ft, the depth to water was measured using an interface probe. The number of DMSs deployed in each well was based on the water volume needed for the required samples. Each sampler was filled with deionized water and attached to a ring on the sampler. The DMSs were deployed within the screened interval of each well and below the water table to ensure that they were fully submerged and within the well screen. The tether was secured to the well cap, and the well and well vault were sealed until sampling.

Sampling

As the tether was reeled up, each DMS was removed from the well and the contents were decanted into the required laboratory supplied sample bottles. Sample bottles were immediately placed on ice pending shipping. After sample bottles were filled, any remaining water was transferred into the required storage container and held in the appropriate IDW yard pending disposal or analysis, based on the historical analytical results from the GWM well. The dedicated tether was placed in a labeled, protective bag for storage until the next sampling event.

B-1.4.2 LOW FLOW SAMPLING

B-1.4.2.1 Instruments and Equipment Used

Low flow sampling was conducted using either a portable or dedicated Bennett pump. Interface probes, PIDs, multi-parameter meters with a flow-through cell attached, and turbidimeters were also used during low-flow sampling. Wells without a dedicated pump were designated, based on historical analytical data, as either clean, intermediate, or expected hazardous. Decontaminated, non-dedicated tubing and portable low flow pumps were used to sample wells designated as clean, with the sampling assembly decontaminated following use at each well. Dedicated tubing specific to a given well was used for wells designated as intermediate or expected hazardous.

B-1.4.2.2 Methods

Where a portable pump was required, the pump was lowered into the GWM well to a depth of approximately 2 ft below the top of screen for wells where the screened interval was fully submerged. Where the screened interval was partially submerged, the pump intake was placed approximately 2 ft above the bottom of the screen.

Where a dedicated pump was present, an air compressor and tubing for the purge water were connected to the dedicated equipment. The pump intake was approximately in the middle of the screened interval in wells with dedicated pumps. There were no dedicated pumps in wells with partially submerged screened intervals.

Purging was conducted in accordance with Part 6.5.17.4 of the RCRA Permit (NMED, 2010), with an approved variance to the purge completion requirements (NMED, 2017a). Purging was conducted at a rate of approximately 0.5 liters per minute, with a maximum flow rate of 1 liter per minute and a minimum flow rate of 0.1 liters per minute. Purge water moved through the flow-through cell on the multiparameter meter and then into an appropriate storage container to be held in the appropriate IDW yard pending disposal or analysis. During purging, field parameters including DO, pH, ORP, turbidity, conductivity, specific conductance, and temperature were measured using the multiparameter meter and turbidimeter and recorded on field forms at a minimum of 5-minute intervals. Purging was complete when the field parameters stabilized for three consecutive measurements to within 10% for specific conductivity, DO, and temperature; below 5 nephelometric turbidity units or within 10% for turbidity; and within 0.5 standard units for pH. When stabilization did not occur within an hour of purging, the well was sampled, and this was noted on field documentation.

After purging was completed, samples were collected and handled in accordance with Part 6.5.5 of the RCRA Permit (NMED, 2010). The required sampling containers were filled and placed on ice pending shipping.

B-1.5 PRODUCTION WELL DRINKING WATER SAMPLING

Production well drinking water sampling is not discussed in the RCRA Permit (NMED, 2010).

B-1.5.1 INSTRUMENTS USED

Drinking water sampling was conducted using a multiparameter meter with a sample cup and a turbidimeter.

B-1.5.2 METHODS

Prior to sampling at a production well, the pump ran for a minimum of 15 minutes and the sample tap was flushed for a minimum of 1 minute to purge any entrained sediment. Field parameters, including temperature, specific conductance, pH, ORP, DO, and turbidity, were measured using a multiparameter meter with a sample cup and a turbidimeter. Values were recorded on a field form as a snapshot of water quality at the time of sampling. After purging was completed, samples were collected and handled in accordance with Part 6.5.5 of the RCRA Permit (NMED, 2010). The required sampling containers were filled and placed on ice pending shipping. The required sampling containers were filled and sealed, checked for headspace bubbles, and placed on ice pending shipping. Purge water was collected in a 5-gallon bucket, labeled, and held pending disposal.

B-1.6 GROUNDWATER TREATMENT SYSTEM

The GWTS was sampled in accordance with the requirements in the Class V Underground Injection Well Discharge Permit No. 1839 (NMED, 2017b).

B-1.6.1 SAMPLING

B-1.6.1.1 Instruments Used

GWTS sampling was conducted using a multiparameter meter with a flow-through cell and a turbidimeter.

B-1.6.1.2 Methods

GWTS samples were collected from ports located before the influent skid pumps, between the granular activated carbon vessels, and after the effluent skid pumps. Prior to sampling, the port was flushed for a minimum of 1 minute. Field parameters, including temperature, specific conductance, pH, ORP, DO, and turbidity, were measured using a multiparameter meter with a flow-through cell and a turbidimeter. Values were recorded on a field form as a snapshot of water quality at the time of sampling. After purging was completed, samples were collected and handled in accordance with Part 6.5.5 of the RCRA Permit (NMED, 2010). The required sampling containers were filled and placed on ice pending shipping.

B-1.6.2 EXTRACTION WELL DISINFECTION

B-1.6.2.1 Methods

Extraction well KAFB-106239 was disinfected in Q1 2021. A pre-disinfection sample was taken before disinfection occurred. Sodium hypochlorite solution was added to 500 gallons of water to provide a concentration of at least 50 parts per million free chlorine when added to an extraction well. The extraction well was shut down, and the diluted sodium hypochlorite solution was gravity-fed down well. The extraction well was kept offline for approximately 24 hours. The well was then turned back online, and its water was pumped down through the conveyance line to the GWTS. This water was discharged to an external sump, bypassing the carbon canisters, where any remaining free chlorine in the well water was allowed to evaporate. A post-disinfection sample was taken after pumping the well free of remaining free chlorine. Pre- and post-disinfection samples were collected from a sample port in the well vault. Prior to sampling, the pump ran for a minimum of 30 minutes and the sample ports were open for a minimum of 10 seconds to flush any entrained sediment. Samples were analyzed for chlorite, bromate, and perchlorate.

B-1.7 PURGE AND DECONTAMINATION WATER MANAGEMENT AND DISPOSAL

Purge and decontamination water was managed and disposed of in accordance with the requirements in Part 6.5.7 of the RCRA Permit (NMED, 2010). Prior to GWM sampling for the quarter, historical data from each monitoring well were evaluated to determine how purge or well maintenance water was initially managed. Purge water was managed in one of three categories: (1) non-hazardous water that met GWTS discharge criteria, (2) non-hazardous water that required evaluation/approval prior to discharge to the GWTS, and (3) hazardous or suspected hazardous water that was managed as hazardous waste. In addition, ancillary fluids (i.e., decontamination water and calibration fluids) were also managed and, if appropriate, discharged at the GWTS after review/approval of analytical data.

B-1.7.1 NON-HAZARDOUS PURGE WATER MANAGEMENT

Non-hazardous IDW purge water collected during sampling of the GWM wells was placed in 55-gallon plastic (poly) drums. The drums were sealed with matching plastic lids with steel, locking-ring collars, labeled with vinyl non-hazardous waste labels, and transferred to the designated non-hazardous IDW yard located on Kirtland AFB. Small volumes of IDW water, typically generated from the sampling of passive sampling devices or sampling of drinking water wells, were placed in labeled, 5-gallon plastic buckets (pails) with sealing lids.

Eligibility for discharge of non-hazardous liquid IDW to the GWTS was determined by comparing historical, well-specific data from the previous two quarters to the acceptance criteria of the GWTS. Liquid IDW from monitoring wells that had historically met the GWTS acceptance criteria was placed on an Auto-Approval List that authorizes discharge to the facility without further review. Any liquid IDW on the Auto-Approval List that was collected, but not yet processed through the GWTS, was temporarily held in the "Pending Disposal" area of the IDW yard.

Liquid IDW sourced from wells with historical data from the previous two quarters that exceeded the GWTS acceptance criteria was held for further evaluation in the "Pending Analysis" area of the IDW yard. Upon receipt of the laboratory analytical data for each well, the data were evaluated against GWTS acceptance criteria. If the data were within GWTS acceptance criteria, the purge water was approved for GWTS discharge. If the data indicated one or more constituents are outside GWTS parameters, the purge water was processed for offsite disposal at a permitted facility.

B-1.7.2 HAZARDOUS PURGE WATER MANAGEMENT

All liquid hazardous waste (purge or well development water) was placed in 55-gallon steel drums with steel tops and locking rings (UN designation 1A2/Y1.2/100/**). When small volumes (less than 5 gallons) of waste were generated at a well, a plastic container with threaded top (jerrican) was used to contain the liquid. The jerrican was then placed in a steel, 55-gallon drum for more secure storage. All waste containers were properly labeled, sealed, and placed on secondary containment pallets located within the appropriate less than 90-day accumulation area. The accumulation areas and waste containers were inspected on a weekly basis by trained personnel as required under 40 Code of Federal Regulations (CFR) 262.34.

Hazardous or suspected hazardous IDW was accumulated in one of two RCRA less than 90-day accumulation areas associated with the Kirtland AFB Bulk Fuels Facility Project. Hazardous waste generated from routine GWM sampling or well maintenance activities (purge, well development or well rehabilitation water) was placed in the Kirtland AFB Bulk Fuels Facility RCRA less than 90-day

accumulation area. Hazardous or suspected hazardous waste generated during drilling activities was held in the Kirtland AFB Zia Park temporary RCRA less than 90-day accumulation area.

Prior to the start of each quarterly GWM sampling event, a preliminary evaluation was made to identify monitoring wells that are anticipated to generate characteristically hazardous liquid IDW for initial waste segregation purposes. Based on historical analytical data available for each well, the water was suspected to be characteristically hazardous if the concentration of benzene exceeded 500 micrograms per liter (per 40 CFR Part 261.24) in either of the previous two sampling events. Liquid IDW from these wells was managed as a potentially characteristically hazardous waste pending confirmation from laboratory analytical results.

For monitoring wells located in the source area of the groundwater plume that show consistent data that indicate purge water was hazardous, "Generator Knowledge" was used for hazardous waste determination. Use of generator knowledge to determine if solid waste is hazardous is permitted under RCRA regulations 40 CFR 262.11(d)(1).

Upon receipt of analytical data, the IDW remained in the less than 90-day accumulation area if confirmed to be a hazardous waste. If the IDW was determined to not meet hazardous criteria based on analytical data, the non-hazardous waste was transferred to the "Pending Disposal" area of the non-hazardous IDW yard.

All hazardous waste was removed from Kirtland AFB and properly disposed of off-Base within the required 90-day accumulation time limit. Hazardous waste was transported off Kirtland AFB after it was properly profiled, manifested, and approved for transport by the Kirtland AFB Hazardous Waste Management Group. Waste was transported by a licensed hazardous waste hauler to a permitted treatment, storage, and disposal facility.

B-1.8 REFERENCES

Kirtland Air Force Base (AFB). 2016. *Aquifer Test Report for Groundwater Extraction Well KAFB-106228, Bulk Fuels Facility, Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico.* Prepared by CB&I Federal Services for Kirtland AFB under USACE–Albuquerque District Contract No. W912DY-10-D-0014. July.

New Mexico Environment Department (NMED). 2010. Hazardous Waste Treatment Facility Operating Permit, EPA ID No. NM9570024423, issued to U.S. Air Force for the Open Detonation Unit Located at Kirtland Air Force Base, Bernalillo County, New Mexico, by the NMED Hazardous Waste Bureau. July.

NMED. 2017a. Correspondence from Juan Carlos Borrego, Deputy Secretary, Environment Department to Colonel Eric H. Froehlich, Base Commander, Kirtland AFB, New Mexico, and Lieutenant Colonel Wayne J. Acosta, Civil Engineer Office, Kirtland AFB, New Mexico, regarding the *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 2, Bulk Fuels Facility Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, EPA ID No. NM9570024423, HWB-KAFB-13-MISC*. May 31.

NMED. 2017b. *Discharge Permit Issuance DP-1839, Kirtland Air Force Base, Bernalillo County, New Mexico*. By the New Mexico Environment Department Groundwater Quality Bureau. April.

Appendix B-2

Current and Former Well Identification

(January-March 2021)

Table B-2
Current and Former Well Identification

Current Well ID	Previous Well ID	REI Assignment	Previous Aquifer Assignment
KAFB-003	KAFB-3, KAFB003	—	Regional Deep
KAFB-015	KAFB-15, KAFB015	—	Regional Deep
KAFB-016	KAFB-16, KAFB016	—	Regional Deep
KAFB-106001	KAFB-1061	4857 & 4838	Shallow
KAFB-106002	KAFB-1062	4857	Shallow
KAFB-106003	KAFB-1063	4857	Shallow
KAFB-106004	KAFB-1064	4857	Shallow
KAFB-106005	KAFB-1065	4857	Shallow
KAFB-106006	KAFB-1066	4857	Shallow
KAFB-106007	KAFB-1067	4857	Shallow
KAFB-106008	KAFB-1068	4857	Shallow
KAFB-106009	KAFB-1069	4857	Shallow
KAFB-106010	KAFB-10610	4857	Shallow
KAFB-106011	KAFB-10611	4857	Shallow
KAFB-106012R	KAFB-10612R	4857	Shallow
KAFB-106013	KAFB-10613	4857	Shallow
KAFB-106014	KAFB-10614	4857	Shallow
KAFB-106015	KAFB-10615	4857 & 4838	Shallow
KAFB-106016	KAFB-10616	4857	Shallow
KAFB-106017	KAFB-10617	4857 & 4838	Shallow
KAFB-106018	KAFB-10618	4857 & 4838	Shallow
KAFB-106019	KAFB-10619	4857 & 4838	Shallow
KAFB-106020	KAFB-10620	4857	Shallow
KAFB-106021	KAFB-10621	4857 & 4838	Shallow
KAFB-106022	KAFB-10622	4857 & 4838	Shallow
KAFB-106023	KAFB-10623	4857	Shallow
KAFB-106024	KAFB-10624	4857	Shallow
KAFB-106025	KAFB-10625	4857 & 4838	Shallow
KAFB-106026	KAFB-10626	4857	Shallow
KAFB-106027	KAFB-10627	4857	Shallow
KAFB-106028	KAFB-10628-510	4857	Shallow
KAFB-106029	—	4857	Shallow
KAFB-106030	—	4838	Intermediate
KAFB-106031	—	4814	Deep
KAFB-106032	—	4857	Shallow
KAFB-106033	—	4838	Intermediate
KAFB-106034	—	4814	Deep
KAFB-106035	—	4857	Shallow
KAFB-106036	—	4838	Intermediate
KAFB-106037	—	4814	Deep
KAFB-106038	—	4857	Shallow
KAFB-106039	—	4838	Intermediate
KAFB-106040	—	4814	Deep
KAFB-106041	—	4857	—
KAFB-106042	—	4857	Shallow
KAFB-106043	—	4814	Deep
KAFB-106044	—	4838	Intermediate
KAFB-106045	—	4814	Deep
KAFB-106046	—	4857	Shallow
KAFB-106047	—	4838	Intermediate
KAFB-106048	—	4814	Deep
KAFB-106049	—	4857	Shallow
KAFB-106050	—	4838	Intermediate
KAFB-106051	—	4814	Deep

Table B-2
Current and Former Well Identification

Current Well ID	Previous Well ID	REI Assignment	Previous Aquifer Assignment
KAFB-106052	—	4857	Shallow
KAFB-106053	—	4838	Intermediate
KAFB-106054	—	4814	Deep
KAFB-106055	—	4857	Shallow
KAFB-106057	—	4838	Intermediate
KAFB-106058	—	4814	Deep
KAFB-106059	—	4857	Shallow
KAFB-106060	—	4838	Intermediate
KAFB-106061	—	4814	Deep
KAFB-106062	—	4814	Deep
KAFB-106063	—	4838	Intermediate
KAFB-106064	—	4857	Shallow
KAFB-106065	—	4838	Intermediate
KAFB-106066	—	4814	Deep
KAFB-106067	—	4857	Shallow
KAFB-106068	—	4814	Deep
KAFB-106069	—	4838	Intermediate
KAFB-106070	—	4857	Shallow
KAFB-106071	—	4814	Deep
KAFB-106072	—	4838	Intermediate
KAFB-106073	—	4838	Intermediate
KAFB-106074	—	4814	Deep
KAFB-106075	—	4857	Shallow
KAFB-106076	—	4857	Shallow
KAFB-106077	—	4838	Intermediate
KAFB-106078	—	4814	Deep
KAFB-106079	—	4857	Shallow
KAFB-106080	—	4838	Intermediate
KAFB-106081	—	4814	Deep
KAFB-106082	—	4857	Shallow
KAFB-106083	—	4838	Intermediate
KAFB-106084	—	4814	Deep
KAFB-106085	—	4857	Shallow
KAFB-106086	—	4838	Intermediate
KAFB-106087	—	4814	Deep
KAFB-106088	—	4857	Shallow
KAFB-106089	—	4838	Intermediate
KAFB-106090	—	4814	Deep
KAFB-106091	—	4857	Shallow
KAFB-106092	—	4838	Intermediate
KAFB-106093	—	4814	Deep
KAFB-106094	—	4857	Shallow
KAFB-106095	—	4838	Intermediate
KAFB-106096	—	4814	Deep
KAFB-106097	—	4838	Intermediate
KAFB-106098	—	4814	Deep
KAFB-106099	—	4838	Intermediate
KAFB-106100	—	4814	Deep
KAFB-106101	—	4838	Intermediate
KAFB-106102	—	4814	Deep
KAFB-106103	—	4838	Intermediate
KAFB-106104	—	4814	Deep
KAFB-106105	—	4838	Intermediate
KAFB-106106	—	4857	Shallow

Table B-2
Current and Former Well Identification

Current Well ID	Previous Well ID	REI Assignment	Previous Aquifer Assignment
KAFB-106107	—	4814	Deep
KAFB-106148-484	—	4857	—
KAFB-106149-484	—	4857	—
KAFB-106150-484	—	4857	—
KAFB-106151-484	—	4857	—
KAFB-106152-484	—	4857	—
KAFB-106153-484	—	4857	—
KAFB-106154-484	—	4857	—
KAFB-106155-484	—	4857	—
KAFB-106156-484	—	4857	—
KAFB-106201	—	4857	Shallow
KAFB-106202	—	4838	Intermediate
KAFB-106203	—	4814	Deep
KAFB-106204	—	4857	Shallow
KAFB-106205	—	4838	Intermediate
KAFB-106206	—	4814	Deep
KAFB-106207	—	4857	Shallow
KAFB-106208	—	4838	Intermediate
KAFB-106209	—	4814	Deep
KAFB-106212	—	4814	Deep
KAFB-106213	—	4857	Shallow
KAFB-106214	—	4838	Intermediate
KAFB-106215	—	4814	Deep
KAFB-106216	—	4857	Shallow
KAFB-106217	—	4838	Intermediate
KAFB-106218	—	4814	Deep
KAFB-106219	—	4857	Shallow
KAFB-106220	—	4838	Intermediate
KAFB-106221	—	4814	Deep
KAFB-106222	—	4857	Shallow
KAFB-106223	—	4838	Intermediate
KAFB-106224	—	4814	Deep
KAFB-106225	—	4857	Shallow
KAFB-106226	—	4838	Intermediate
KAFB-106227	—	4814	Deep
KAFB-106228	—	—	—
KAFB-106229	—	4857	Shallow, Intermediate, and Deep
KAFB-106230	—	4838	Intermediate
KAFB-106231	—	4857	Shallow
KAFB-106232	—	4838	Intermediate
KAFB-106233	—	—	—
KAFB-106234	—	—	—
KAFB-106235-438	KAFB-106235-463	4857	—
KAFB-106235-472	KAFB-106235-492	4838	—
KAFB-106235-501	KAFB-106235-521	4814	—
KAFB-106236-436	KAFB-106236-461	4857	—
KAFB-106236-470	KAFB-106236-490	4838	—
KAFB-106236-499	KAFB-106236-519	4814	—
KAFB-106240-449	—	4857	—
KAFB-106241-428	—	4857	—
KAFB-106242-418	—	4857	—
KAFB-106243-425	—	4857	—
KAFB-106244-445	—	4857	—
KAFB-106245-460	—	4857	—

Table B-2
Current and Former Well Identification

Current Well ID	Previous Well ID	REI Assignment	Previous Aquifer Assignment
KAFB-106247-490	—	4857	—
KAFB-106S1-447	—	4857	—
KAFB-106S2-451	—	4857	—
KAFB-106S3-449	—	4857	—
KAFB-106S4-446	—	4857	—
KAFB-106S5-446	—	4857	—
KAFB-106S7-491	—	4857	—
KAFB-106S8-491	—	4857	—
KAFB-106S9-447	—	4857	—
KAFB-106S10-443	--	4857	—
KAFB-3411	KAFB3411	4857	Shallow
ST106-VA2	VA HOSPITAL WELL	—	Regional Deep

— = not applicable
ID = identification
REI = reference elevation interval
VA = Veteran's Affairs

Appendix C-1

Daily Quantity Control Reports -

Groundwater Sampling

(January-March 2021)

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 636040
Daily Quality Control Report – Non-Construction

ROLE: DMS Deployment DATE: 12/14/2020

WEATHER: Cloudy, high ~45°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bockisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Roseboragh	EA - field staff
Dylan Schmeelk	EA - field staff

2. OPERATING EQUIPMENT

Team #1	Team #2	Spare
YSI Professional Plus 18L100378 WH0003 ☐	YSI Professional Plus 15K101396 WH0001 ☐	YSI Professional Plus 15L100541 WH0002 ☐
MiniRAE 3000 592-915778 WH0005 ☐	MiniRAE 3000 592-915790 WH0004 ☑	MiniRAE 3000 592-915679 WH0006 ☐
Geotech Turbidimeter 18081855 ☐	Hach 2100Q 15100C044633 WH0009 ☐	Hach 2100Q 15100C045025 WH0007 ☐
Solinst Water Level Meter ~~253056~~ 350333 WH0567 ☑	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Interface Probe 0001 ☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells deployed: KAFB-106207, KAFB-106208, KAFB-106209, KAFB-106204, KAFB-106205, KAFB-106216, KAFB-106217, KAFB-106218, KAFB-106224, KAFB-106223, KAFB-106222

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0905	Leave trailer for KAFB-106207 cluster
0918	Arrive at KAFB-106207 cluster
~~1030~~	~~Leave KAFB-106207 cluster for KAFB-106204 cluster~~
	~~Arrive at KAFB-106204 cluster~~

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12/14/2020

4. WORK PERFORMED (Continued)	
0930	Deploy DMS sampling bags in KAFB-106207, KAFB-106208, KAFB-106209
1030	Leave KAFB-106207 cluster for KAFB-106204 cluster
1042	Arrive at KAFB-106204 cluster
1100	Deployed KAFB-106204, KAFB-106205
1148	Leave KAFB-106204 cluster for KAFB-106~~222~~ 217 AR cluster
1153	Arrive at KAFB-106~~222~~ 217 AR cluster
1205	Deploy KAFB-106216, KAFB-106217, KAFB-106218
1255	Leave KAFB-106217 cluster for KAFB-106222 cluster
1258	Arrive at KAFB-106222 cluster
1305	Deploy KAFB-106222, KAFB-106223, KAFB-106224
1349	Leave KAFB-106222 cluster for trailer
1359	Arrive at trailer

AR

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Roseborough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 12-15-2020

WEATHER: partly cloudy, high ~40°F

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
Bernard Buckisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebraugh	EA - Field staff
Dylan Schmeelk	EA - Field staff

AR

2. OPERATING EQUIPMENT

Team #1	Team #2	Spare
~~YSI Professional Plus 18L100378~~ WH0003 ☐	~~YSI Professional Plus 15K101396~~ WH0001 ☐	YSI Professional Plus 15L100541 WH0002 ☐
MiniRAE 3000 592-915778 WH0005 ☐	MiniRAE 3000 592-915790 WH0004 ☒	MiniRAE 3000 592-915579 WH0006 ☐
Geotech Turbidimeter 18081855 ☐	Hach 2100Q 15100C044633 WH0009 ☐	Hach 2100Q 15100C045025 WH0007 ☐
Solinst Water Level Meter ~~253056~~ WH0567 ☑	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Interface Probe 0001 ☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells deployed: KAFB-106242, KAFB-106029, KAFB-106030, KAFB-106031, KAFB-106231, KAFB-106232, KAFB-106206, KAFB-106236, KAFB-106235

AR

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

1033	Leave trailer for KAFB-106242
1043	Arrive at KAFB-106242
1125	Deployed KAFB-106242
1132	Leave KAFB-106242 for KAFB-106029 cluster

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12-15-2020

4. WORK PERFORMED (Continued)	
1135	Arrive at KAFB-106029 cluster and deploy all three wells
1232	Leave KAFB-106029 cluster for KAFB-106231 cluster
1235	Arrive at KAFB-106231 cluster
1246	Leave KAFB-106231 cluster for KAFB-106242
1250	Arrive at KAFB-106242
1306	Leave KAFB-106242 for KAFB-106231 cluster
1311	Arrive at KAFB-106231 cluster
~~1340~~	~~Leave KAFB-106231AR~~ AR
1320	Deploy KAFB-106231 and KAFB-106232
1342	Leave KAFB-106231 cluster for KAFB-106206
1345	Arrive at KAFB-106206
1350	Deploy KAFB-106206
1400	Leave KAFB-106206 for KAFB-106236
1405	Arrive at KAFB-106236
1415	Deploy KAFB-106236 (all three levels)
1430	Leave KAFB-106236 for KAFB-106235
1432	Arrive at KAFB-106235
1440	Deploy KAFB-106235 (all three levels)
1518	Leave KAFB-106235 for ~~AR~~ Trailer
1532	Arrive at trailer

At

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: _____

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

ROLE: DMS Deployment DATE: 12/16/2020

WEATHER: Sunny, high ~45°

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
Bernard Beckisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebrough	EA - Field staff
Dylan Schmeltz	EA - field staff

2. OPERATING EQUIPMENT

Team #1	Team #2	Spare
YSI Professional Plus 18L100378 WH0003 ☐	YSI Professional Plus 15K101396 WH0001 ☐	YSI Professional Plus 15L100541 WH0002 ☐
MiniRAE 3000 592-915778 WH0005 ☐	MiniRAE 3000 592-915790 WH0004 ☒	MiniRAE 3000 592-915579 WH0006 ☐
Geotech Turbidimeter 18081855 ☐	Hach 2100Q 15100C044633 WH0009 ☐	Hach 2100Q 15100C045025 WH0007 ☐
Solinst Water Level Meter ~~253056~~ WH0567 ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Interface Probe 0001 ☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells deployed: KAFB-106201, KAFB-106202, KAFB-106203, KAFB-106230, KAFB-106241, KAFB-106044, KAFB-106050, KAFB-106051, KAFB-106041, KAFB-106032, KAFB-106033, KAFB-106034, KAFB-106240, KAFB-106244, KAFB-106243

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0816	Leave trailer for KAFB-106201 cluster
0823	Arrive at KAFB-106201 cluster
~~0937~~	Leave WH
0933	Deploy KAFB-106201, KAFB-106202, KAFB-106203

DQCR Page ~~1 of 2~~ 1 of 3

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12-16-2020

4. WORK PERFORMED (Continued)	
0937	Leave KAFB-106201 cluster for trailer
0942	Arrive at trailer KAFB-106230
0950	leave trailer for KAFB-106230
1010	Deploy KAFB-106230
1019	leave KAFB-106230 for KAFB-106241
1030	Arrive at KAFB-106241
~~1051~~	~~leave~~ KAFB-106 HR
1045	Deploy KAFB-106241
1052	leave KAFB-106241 for KAFB-106049 cluster
1053	Arrive at KAFB-106049 cluster
1146	Deploy KAFB-106049, KAFB-106051, KAFB-106050
1205	leave KAFB-106049 cluster for KAFB-106041
1209	Arrive at KAFB-106041
1230	Deploy KAFB-106041
1234	leave KAFB-106041 for KAFB-106032 cluster
1237	Arrive at KAFB-106032 cluster
1245	Deploy KAFB-106032, KAFB-106033, KAFB-106034
1325	leave KAFB-106032 cluster for trailer
HR 1335	Arrive at trailer
1340	leave trailer for KAFB-106240
1348	Arrive at KAFB-106240
1402	Deploy KAFB-106240
1412	leave KAFB-106240 for KAFB-106244
1413	Arrive at KAFB-106244
1425	Deploy KAFB-106244
1436	leave KAFB-106244 for KAFB-106243

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Roselbraugh
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of ~~2~~ 3

Reviewed by: _____

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ X 6360401
Daily Quality Control Report – Non-Construction

DATE: 12/16/2020

4. WORK PERFORMED (Continued)	
1442	Arrive at KAFB-106243
1502	Deploy KAFB-106243
1510	Leave KAFB-106243 for trailer
1522	Arrive at trailer

AR

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page ~~2 of 2~~ 3 of 3 JM

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring – ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

ROLE: PMS Replacement DATE: 12/17/2020

WEATHER: Partly cloudy, high ~ 45°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Beckisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebraugh	EA - Field staff
Dylan Schmeelk	EA - Field staff

AR

2. OPERATING EQUIPMENT

Team #1	Team #2	Spare
YSI Professional Plus 18L100378 WH0003 ☐	~~YSI Professional Plus 15K101396~~ WH0001 ☐	YSI Professional Plus 15L100541 WH0002 ☐
MiniRAE 3000 ~~592-915778~~ WH0005 ☐	MiniRAE 3000 592-915790 WH0004 ☒	MiniRAE 3000 592-915579 WH0006 ☐
Geotech Turbidimeter 18081855 ☐	Hach 2100Q 15100C044633 WH0009 ☐	Hach 2100Q 15100C045025 WH0007 ☐
Solinst Water Level Meter ~~253056~~ 253056 ~~WH03~~ AR ☒	Solinst Water Level Meter ~~253053~~ ~~WH0012~~ AR WH0567 ☒	Geotech Interface Probe 0001 ☐

AR

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells Deployed: KAFB-106245, KAFB-10654, KAFB-106247, KAFB-10658, KAFB-106153, KAFB-10651, KAFB-106149, KAFB-106152, KAFB-106151 KAFB-10659, KAFB-10652, KAFB-10653

AR

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0825	Leave trailer for KAFB-106245
0926	Arrive at KAFB-106245
0949	Deploy KAFB-106245
0952	Leave KAFB-106245 for KAFB-10654

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12/17/2020

4. WORK PERFORMED (Continued)	
0858	Arrive at KAFB-10654
0930	Deploy KAFB-10654
0934	Leave KAFB-10654 for KAFB-106245
0935	Arrive at KAFB-106245
0955	Re-deploy KAFB-106245
0959	Leave KAFB-106245 for trailer
1002	Arrive at trailer
1005	Leave trailer for KAFB-106247
1010	Arrive at KAFB-106247
1035	Deploy KAFB-106247
1046	Leave KAFB-106247 for KAFB-10658
1048	Arrive at KAFB-10658
1110	Deploy KAFB-10658
1114	Leave KAFB-10658 for KAFB-106153
1120	Arrive at KAFB-106153
1140	Deploy KAFB-106153
1145	Leave KAFB-106153 for KAFB-106 ~~154~~ S1
1146	Arrive at KAFB-106 ~~154~~ S1
1232	Deploy KAFB-10651
1235	Leave KAFB-10651 for KAFB-106
1237	Arrive at KAFB-106149
1315	Deploy KAFB-106149
1319	Leave KAFB-106149 for KAFB-106
1321	Arrive at KAFB-106152
1350	Deploy KAFB-106152
1355	Leave KAFB-106152 for KAFB-106151

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of ~~2~~ 3

Reviewed by: _____ Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12/17/2020

4. WORK PERFORMED (Continued)	
1356	Arrive at KAFB-106151
1430	Deploy KAFB-106 151
1445	Leave KAFB-106151 for KAFB-10659
1447	Arrive at KAFB-10659
1450	Deploy KAFB-10659
1510	Leave KAFB-10659 for KAFB-10652
1512	Arrive at KAFB-10652
1539	Deploy KAFB-10652
1542	Leave KAFB-10652 for KAFB-10653
1545	Arrive at KAFB-10653
1609	Deploy KAFB-10653
1611	Leave KAFB-10653 for trailer
1615	Arrive at trailer

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

3 of 3
DQCR Page ~~2 of 2~~ 3 JM

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

ROLE: DMS Deployment Team DATE: 12-18-2020

WEATHER: High of 32°F, clear, calm

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bockisch	EA - Site Manager/Supervisor
Peter Ferrari	EA - Site Health and Safetly Office
Dylan Schmeelk	EA - Field Staff
Amy Rosebrough	EA - Field Staff

2. OPERATING EQUIPMENT

Team #1		Team #2		Spare	
YSI Professional Plus 18L100378 WH0003	☐	YSI Professional Plus 15K101396 WH0001	☐	YSI Professional Plus 15L100541 WH0002	☐
MiniRAE 3000 592-915778 WH0005	☐	MiniRAE 3000 592-915790 WH0004	☒	MiniRAE 3000 592-915579 WH0006	☐
Geotech Turbidimeter 18081855	☐	Hach 2100Q 15100C044633 WH0009	☐	Hach 2100Q 15100C045025 WH0007	☐
Solinst Water Level Meter 253056	☒	Solinst Water Level Meter 253053 WH0012	☐	Geotech Interface Probe 0001	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Deployed: KAFB-106S5, KAFB-106S7

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0647	Leave field trailer for KAFB-106S5
0659	Arrive at KAFB-106S5 and Deploy (DMS) in well.
0726	Leave KAFB-106S5 for KAFB-106S7
0728	Arrive at KAFB-106S7 and Deploy DMS in well

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWTS Expansion/Monitoring -- ~~62599DM01~~ 6360401
Daily Quality Control Report – Non-Construction

DATE: 12-18-2020

4. WORK PERFORMED (Continued)	
0752	Leave KAFB-1067 for field trailer
0803	Arrive at field trailer
	EOD

5. **CONTRACTOR'S VERIFICATION:** I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Name: Dylan Schmeelk Signature:

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-4-2021

WEATHER: Clear skies, high ~47°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bockisch	EA - Site Manager/Supervisor
Peter Ferrari	EA - Site Health and Safetly Office
Dylan Schmeelk	EA - Sampler
Amy Rosebrough	EA - Sampler

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells sampled: KAFB-106216, KAFB-106217, KAFB-106218, KAFB-106222, KAFB-106223, KAFB-106224, KAFB-106207, KAFB-106208, KAFB-106209, KAFB-106204, KAFB-106205 AR

Moved Duplicate Sample from KAFB-106205 to KAFB-106204.

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0853	Leave trailer for KAFB-106216 cluster
0903	Arrive at KAFB-106216 cluster
1010	Sample KAFB-106216, KAFB-106217, KAFB-106218
1018	Leave KAFB-106216 cluster for KAFB-106224 cluster

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-4-2021

4. WORK PERFORMED (Continued)	
1019	Arrive at KAFB-106224 cluster
1105	Sample KAFB-106222, KAFB-106223, KAFB-106224
1110	Leave KAFB-106224 cluster for KAFB-106207 cluster
1113	Arrive at KAFB-106207 cluster
1157	sample KAFB-106207, KAFB-106208, KAFB-106209
1204	leave KAFB-106207 cluster for KAFB-106205 cluster
1208	Arrive at KAFB-106205 cluster
1250	Sampled KAFB-106205 and KAFB-106204. Moved
AR	duplicate from KAFB-106205 to KAFB-106204.
1259	leave KAFB-106205 cluster for gas station
1305	Arrive at gas station
1320	leave gas station for trailer
1326	Arrive at trailer

AR

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 1 - DMS Sampling DATE: 01-05-~~2020~~ 2021 AR

WEATHER: Clear skies, high ~ 55°F

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
Bernard Bockisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Roseborough	EA - Field Sampler
Dylan Schmeelk	EA - Field Sampler

AR

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐ AR
~~MiniRAE 3000 592-915778 Wh0005~~ ☐	~~MiniRAE 3000 592-915790 Wh0004~~ ☐	MiniRAE 3000 592-915579 Wh0006 ☑
Hach 2100Q 15100C045025 Wh0007 ☐	~~Hach 2100Q 15100C044633 Wh0009~~ ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
~~Solinst Water Level Meter 350334 WH0566~~ ☐	~~Solinst Water Level Meter 253056 WH0571~~ ☐	☐ AR

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells Sampled: KAFB-106242, KAFB-106029, KAFB-106030, KAFB-106031, KAFB-106231, KAFB-106232, KAFB-106206, KAFB-106236-436, KAFB-106236-470, KAFB-106236-499, KAFB-106235-438, KAFB-106235-472, KAFB-106235-501

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0846	Leave trailer for KAFB-106242
0850	Arrive at KAFB-106242
0915	Sample KAFB-106242
0933	Leave KAFB-106242 for KAFB-106029 cluster

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 01/05/2021

4. WORK PERFORMED (Continued)	
0934	Arrive at KAFB-106029 cluster
~~0937~~ 1030	Sample KAFB-106029, KAFB-106030, KAFB-106031
1032	Leave KAFB-106029 cluster for KAFB-106231 cluster
1034	Arrive at KAFB-106231 cluster
1100	Sample KAFB-106231 and KAFB-106232
1105	Leave KAFB-106231 cluster for KAFB-106206
1106	Arrive at KAFB-106206
1125	Sample KAFB-106206
1131	Leave KAFB-106206 for KAFB-106236
1134	Arrive at KAFB-106236 cluster
1215	Sample KAFB-104236 cluster
1225	Leave KAFB-106236 cluster for KAFB-106235 cluster
1238	Arrive at KAFB-106235 cluster
1315	Sample KAFB-106235 cluster
1324	Leave KAFB-106235 cluster for trailer
1334	Arrive at trailer

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: _____

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 1 DATE: 01/06/2021

WEATHER: Clear skies, high ~ 51°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bockisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebrough	EA - Field employee
Dylan Schmeelk	EA - Field employee

2. OPERATING EQUIPMENT

~~YSI Professional Plus 18L100378~~ Wh0003 ☐	~~YSI Professional Plus 15K101396~~ Wh0001 ☐	~~YSI Professional Plus 15L100541~~ Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	~~MiniRAE 3000 592-915790~~ Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 ~~Wh0009~~ ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells Sampled: KAFB-106201, KAFB-106202, KAFB-106203, KAFB-106032, KAFB-106033, KAFB-106034, KAFB-106049, KAFB-106050, KAFB-106051, KAFB-106041, KAFB-106230, KAFB-106241

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0844	Leave trailer for KAFB-106201 cluster
0851	Arrive at KAFB-106201 cluster
0940	Sampled KAFB-106201, KAFB-106202, KAFB-106203
0946	Leave KAFB-106201 cluster for KAFB-106032 cluster

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 01/06/2021

4. WORK PERFORMED (Continued)

1002	Arrive at KAFB-106032 cluster
1040	Sample KAFB-106032, KAFB-106033, KAFB-106034
1047	Leave KAFB-106037 cluster for KAFB-106049 cluster
1053	Arrive at KAFB-106049 cluster
1145	Sample KAFB-106049, KAFB-106050, KAFB-106051
1158	Leave KAFB-106049 cluster for KAFB-106041
1200	Arrive at KAFB-106041
1212	Sampled KAFB-106041
1226	Leave KAFB-106041 for KAFB-106230
1228	Arrive at KAFB-106230
1242	Sample KAFB-106230
1254	Leave KAFB-106230 for KAFB-106241
1256	Arrive at KAFB-106241
1310	Sampled KAFB-106241
1333	Leave KAFB-106241 for trailer
1341	Arrive at trailer

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Roseboroughs
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: _____

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 1 DATE: 1/7/2021

WEATHER: Clear skies, high 250F

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
Bernard Bocksch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Roseboragh	EA - Field staff
Dylan Schmeltz	EA - Field Staff

AR

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☑
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

AR2 AR AR

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells Sampled: KAFB-106240, KAFB-106244, KAFB-106243, KAFB-106245, KAFB-106154, KAFB-106247, KAFB-106158, KAFB-106153, KAFB-106149 AR KAFB-106151, KAFB-106152

AR2

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0826	leave trailer for KAFB-106240
0831	Arrive at KAFB-106240
0845	sample KAFB-106240
1039	Leave KAFB-106240 for KAFB-106244

1 of 3

DQCR Page ~~1 of 2~~ JM

Reviewed by: JM Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1/7/2021

4. WORK PERFORMED (Continued)	
902	Arrive at KAFB-106244
915	Sample KAFB-106244
924	Leave KAFB-106244 for KAFB-106243
932 ~~0935~~	Arrive at KAFB-106243
945	Sample KAFB-106243
1005	Leave KAFB-106243 for KAFB-106245
1015	Arrive at KAFB-106245
1030	Sample KAFB-106245
1045	Leave KAFB-106245 for KAFB-10654
1048	Arrive at KAFB-10654
1100	Sample KAFB-10654
1113	Leave KAFB-10654 for KAFB-106247
1116	Arrive at KAFB-106247
1130	Sample KAFB-106247
1205	Leave KAFB-106247 for KAFB-10658
1206	Arrive at KAFB-10658
1230	Sample KAFB-10658
1246	Leave KAFB-10658 for KAFB-106153
1249	Arrive at KAFB-106153
1300	Sample KAFB-106153
1317	Leave KAFB-106153 for KAFB-106149
1320	Arrive at KAFB-106149
1346	Sample KAFB-106149
1409	Leave KAFB-106149 for KAFB-10651
1410	Arrive at KAFB-10651
1425	Sample KAFB-10651

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

3
DQCR Page 2 of ~~2~~

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1/7/2021

4. WORK PERFORMED (Continued)	
1438	Leave KAFB-10651 for KAFB-10652
1441	Arrive at KAFB-10652
1500	Sample KAFB-10652 ~~for~~ AR
1525	Leave KAFB-10652 for trailer
1528	Arrive at trailer

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page ~~2 of 2~~ 3 of 3

Reviewed by: JM

Reviewed date: 1-19-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 1 DATE: 1-8-2021

WEATHER: Sunny, clear skies, high ~ 50°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Koleisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebrough	EA - field staff
Dylan Schmeelk	EA - field staff

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☒	MiniRAE 3000 592-915579 Wh0006 ☐
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☒	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells Sampled: KAFB-10655 KAFB-10657 KAFB-10653, KAFB-10652, KAFB-10659, KAFB-10651

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0821	Leave trailer for KAFB-10655
0829	Arrive at KAFB-10655
0945	Sample KAFB-10655
0903	Leave KAFB-10655 for KAFB-10657

DQCR Page 1 of 2

Reviewed by: J. Messenger Reviewed date: 1-18-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-8-2021

4. WORK PERFORMED (Continued)	
0920	Sample KAFB-10657
0939	Leave KAFB-10657 for ~~trailer~~ AR KAFB-10653
0954	Arrive at KAFB-10653
1010	Sample KAFB-10653 ~~at AR~~
1024	Leave KAFB-10653 For KAFB-106152
1030	Arrive at KAFB-106152
1045	Sample KAFB-106152
1100	Leave KAFB-106152 for KAFB-10659
1102	Arrive at KAFB-10659
1115	Sample KAFB-10659
1130	Leave KAFB-10659 for KAFB-106151
1133	Arrive at KAFB-106151
1145	Sample KAFB-106151
1205	Leave KAFB-106151 for KAFB-10658
1215	Gauge KAFB-10658
1216	Leave KAFB-10658 for trailer
1220	Arrive at trailer
AR	

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rieselbach
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: JM

Reviewed date: 1-18-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-11-2021

WEATHER: Clear sky; mid 40s (°F)

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bochisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
D. Schmeelk / J. Messenger	EA – Team #1

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☒	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☒	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☒	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

1105	took ER211-01 for pump 1807B-919
1225	took MS/MSD on KAFB-106012R
0940	when pumping for ER noticed that tubing on reel was cut – new tubing was used to make dedicated tubing for KAFB-106012R to sample

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0811	left field office – 0819 Arrived @ ~~gas station~~ Auto Zone to get new decon sponges
0824	left Auto Zone – 0828 Arrived @ gas station – 0846 left gas station
0855	Arrived @ KAFB-106012R – 0915 D. Schmeelk to field office to get Alconox
0925	D. Schmeelk back on site – 1105 took equipment rinsate – 1225 Sampled KAFB-106012R

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-11-2021

4. WORK PERFORMED (Continued)

1341	Left KAFB-106012R – 1342 Arrived @ KAFB-106009
1505	Sampled KAFB-106009 – 1615 Left KAFB-106009
1618	Arrived @ field office - Waste Management - Shipping

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-12-21

WEATHER: Clear sky; high 40s(°F)

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bochisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
D. Schmeelk / J. Messenger	EA - Team #1
	AB

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☒	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☒	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

–	Waste – KAFB-106013 (14 gal); KAFB-106098 (12 gal); KAFB-106097 (1 gal)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0725	Left field office – 0742 Arrived @ KAFB-106013 cluster
0940	Sampled KAFB-106013 – 1017 left KAFB-106013
1028	Arrived @ field office – 1039 Left field office
1050	Arrived @ KAFB-106013 cluster – 1230 Sampled KAFB-106098

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-12-21

4. WORK PERFORMED (Continued)	
1410	Sampled KAFB-106097 – 1503 Left KAFB-106013 cluster
1514	Arrived @ field office – Waste Management – Sample Shipping

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-13-21

WEATHER: Sunny, Calm, high of 55°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bockisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
J. Messenger / D. Schmeelk	EA - Team #1
	AS

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☒	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☒	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

—	Waste: KAFB-106004 (12 gal); KAFB-106100 (13 gal); KAFB-106099 (11 gal); KAFB-106101 (12 gal)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0728	Left field office – 0738 Arrived @ KAFB-106100 cluster to sample
0850	Sampled KAFB-106004 – 1055 Sampled KAFB-106100
1230	Sampled KAFB-106099 – 1320 Left KAFB-106100 cluster
1326	Arrived @ KAFB-106101 – 1420 Sampled KAFB-106101

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Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-13-21

4. WORK PERFORMED (Continued)	
1510	left KAFB-106101 – 1513 Arrived @ field trailer
	- Waste Management
	- Sample Shipment

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-14-21

WEATHER: mid 50s(°F); clear sky

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bockisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
J. Messenger / D. Schmaltz	EA - Team #1
	AJ

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☒	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☒	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

—	Waste: KAFB-106003 (10.5 gal); KAFB-106102 (12 gal)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0724	Left field office — 1027 Arrived @ KAFB-106003 cluster
0835	Sampled KAFB-106102 - 1038 Sampled KAFB-106003
1138	Left KAFB-106003 cluster - 1141 Arrived @ field office
1415	ER211-02 taken on pump: 1807B-902 — Waste Magment + Sample Shipping

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/3/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

4. WORK PERFORMED (Continued) DATE: 1-14-21

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 DATE: 1-15-21

WEATHER: Clear Sky; mid 50s (°F) breezy

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bockisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
J. Messenger / D. Schmeelk	EA – Team #1
	AS

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☒	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☒	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☒	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

–	Bailed KAFB-106005 ≈ 2 gallons
1325	Sampled duplicate @ KAFB-106005

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0750	Left field office – 0758 Arrived @ KAFB-106S10
0925	Sampled KAFB-106S10 – 1034 Left KAFB-106S10
1038	Arrived @ field office – 1046 Left field office
1049	Arrived @ KAFB-106005 – 1056 Measured 0.04' LNAPL above water

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

4. WORK PERFORMED (Continued) DATE: 1-15-21

1115	Logan Bailing KAFB-106005
1141	Measure DTW = 470.38 no NAPL measured
1325	Sampled KAFB-106005
1440	left KAFB-106005
1442	Arrived @ field office
	- Waste Management
	- Sample Shipment

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 - Gauging DATE: 1-18-21

WEATHER: mid 50s(°F); partly cloudy/mostly sun

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Bockisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
D. Schmeltz / J. Messenger	EA - Team #1

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☒	MiniRAE 3000 592-915579 Wh0006 ☐
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☒	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☒	Solinst Water Level Meter 253056 WH0571 ☒	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

0825	All three meters calibrated @ KAFB-106027 cluster

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0729	Left field office – 0733 Arrived @ KAFB-106027 cluster to calibrate meters
0833	Left KAFB-106027 cluster – 0835 Arrived @ KAFB-106016 – 0845 Left KAFB-106016
0846	Arrived @ KAFB-106156 – 0858 Left KAFB-106156 – 0900 Arrived @ KAFB-3411
0911	Left KAFB-~~106~~ 3411 – 0913 Arrived @ KAFB-106151 – 0925 Left KAFB-106151

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-18-21

4. WORK PERFORMED (Continued)

	and arrived @ KAFB-106059 cluster – 0950 Left KAFB-106059 cluster
0951	Arrived @ KAFB-106152 – 1007 Left KAFB-106152
1009	Arrived @ KAFB-10658 cluster – 1026 Left KAFB-10658 cluster
1027	Arrived @ KAFB-106062 cluster – 1043 Left KAFB-106062 cluster
1046	Arrived @ KAFB-106048 cluster – 1105 Left KAFB-106048 cluster
1110	Arrived @ KAFB-106247 – 1117 Left KAFB-106247
1118	Arrived @ KAFB-106007 – 1126 Left KAFB-106007
1127	Arrived @ KAFB-106155 – 1137 Left KAFB-106155
1137	Arrived @ KAFB-106006 cluster – 1149 Left KAFB-106006 cluster
1152	Arrived @ field office – 1206 Left field office
1210	Arrived @ KAFB-106024 cluster – 1224 Left KAFB-106024 cluster
1226	Arrived @ KAFB-106001 – 1242 Left KAFB-106001
1242	Arrived @ KAFB-106149 – 1250 Left KAFB-106149
1251	Arrived @ KAFB-106154 – 1300 Left KAFB-106154
1301	Arrived @ KAFB-106153 – 1308 Left KAFB-106153
1309	Arrived @ KAFB-106076 cluster – 1350 left KAFB-106076 cluster
1353	Arrived @ field office

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 2 DATE: 1/18/2021

WEATHER: Partly cloudy - high ~ 55°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bockish	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebrough	EA - ~~Amy Rosebrough~~ Field Staff
Galveston Begaye	EA - Field Staff

AR

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells gauged: ~~KAFB-106044, KAFB-106045, KAFB-AR~~ AR
KAFB-106207, KAFB-106208, KAFB-106209, KAFB-106236-436
KAFB-106236-470, KAFB-106236-499, KAFB-106235-438,
KAFB-106235-472, KAFB-106235-501, ~~KAFB-106237~~ AR
KAFB-106220, KAFB-106221, KAFB-106204, KAFB-106205
KAFB-106206, KAFB-106073, KAFB-106074,
KAFB-106075, KAFB-106020, KAFB-106013, KAFB-106097,
KAFB-106098, KAFB-106082, KAFB-106083,
KAFB-106084, KAFB-106018, KAFB-106240, KAFB-106004,
KAFB-106099, KAFB-106100, KAFB-106244-445

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0729	Leave trailer for KAFB-106044 cluster to calibrate
~~AR~~	meters
0733	Arrive at KAFB-106044 cluster
0813	Leave KAFB-106044 cluster for KAFB-106201 cluster

DQCR Page 1 of 2

Reviewed by: JM Reviewed date: 1-18-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1/18/2021

4. WORK PERFORMED (Continued)	
0820	Arrive at KAFB-106201 cluster - pump not on,
~~AR~~	couldn't gage.
0839	Leave KAFB-106201 cluster for KAFB-106208 cluster
0847	Arrive at KAFB-106208 cluster
0915	Leave KAFB-106208 cluster for KAFB-106236 cluster
0918	Arrive at KAFB-106236 cluster
0940	Leave KAFB-106236 cluster for KAFB-106235 cluster
0942	Arrive at KAFB-106235 cluster
0959	Leave KAFB-106235 cluster for KAFB-106219
01000	Arrive at KAFB-106219
1016	Leave KAFB-106219 for KAFB-106204 cluster
1019	Arrive at KAFB-106204 cluster
1047	Leave KAFB-106204 cluster for KAFB-106073 cluster
1052	Arrive at KAFB-106073 cluster
1117	Leave KAFB-106073 cluster for KAFB-106020
1118	Arrive at KAFB-106020
1129	Leave KAFB-106020 for KAFB-106013 cluster
1130	Arrive at KAFB-106013 cluster
1215	Leave KAFB-106013 cluster for KAFB-106082 cluster
1217	Arrive at KAFB-106082 cluster
1254	Leave KAFB-106082 for KAFB-106240
1257	Arrive at KAFB-106240
1306	Leave KAFB-106240 ~~004 cluster~~ AR for KAFB-106004 cluster
1310	Arrive at KAFB-106004 cluster
1335	Leave KAFB-106004 cluster for trailer
1350	Arrive at trailer - Done for day.

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Roseborough
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: JM

Reviewed date: 1-18-21

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 - Gauging DATE: 1-20-21

WEATHER: High 40s (°F), mostly cloudy – light snow

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
B. Barkisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
J. Messenger / D. Schmeelk	E+ – Team #1

AB

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☒	MiniRAE 3000 592-915579 Wh0006 ☐
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☒	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☒	Solinst Water Level Meter 253056 WH0571 ☒	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0720	left field office – 0723 arrived @ KAFB-106003 cluster
0753	left KAFB-106003 cluster – 0754 arrived @ KAFB-106002
0804	left KAFB-106002 – 0805 arrived @ KAFB-106012R
0816	left KAFB-106012R – 0818 arrived @ KAFB-106005 cluster

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/202

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-20-21

4. WORK PERFORMED (Continued)

0840	Left KAFB-106005 cluster — 0841 Arrived @ KAFB-106080 cluster
0902	Left KAFB-106080 cluster — 0902 Arrived @ KAFB-106014/S3
0916	Left KAFB-106014/S3 - 0916 Arrived @ KAFB-106011
0928	Left KAFB-106011 - 0929 Arrived @ KAFB-106245
0941	Left KAFB-106245 — 0943 Arrived @ field office
0946	Left field office - 0955 Arrived @ KAFB-106094 cluster
1017	Left KAFB-106094 cluster — 1020 Arrived @ KAFB-106065 cluster
1050	Left KAFB-106065 cluster — 1051 Arrived @ KAFB-106069 cluster
1113	Left KAFB-106069 cluster — 1115 Arrived @ KAFB-106010 cluster
1130	Left KAFB-106010 cluster — 1135 Arrived @ KAFB-106017 cluster
1141	Left KAFB-106017 cluster — 1142 Arrived @ KAFB-106019 ~~cluster~~
1148	Left KAFB-106019 - 1151 Arrived @ KAFB-106038 cluster
1205	Left KAFB-106038 cluster — 1213 Arrived @ field office (EOD)

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQGR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team 2 - Gauging DATE: 1-20-2021

WEATHER: Cloudy, 30% chance precip, high of 46°F

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
Bernard Bochisch	EA - Site Manager/Supervisor
Pete Ferrari	EA - Site Health and Safetly Office
Amy Rosebrough	EA - Field staff
Galveston Begaye	EA - field staff

AR

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells gauged: KAFB-106201, KAFB-106202, KAFB-106203, KAFB-106219, KAFB-106213, KAFB-106214, KAFB-106215, KAFB-106035, KAFB-106036, KAFB-106037, KAFB-106212, KAFB-106022, KAFB-106023, KAFB-106103, KAFB-106104, KAFB-106088, KAFB-106089, KAFB-106090, KAFB-106243, KAFB-106085, KAFB-106086, KAFB-106087, KAFB-106070, KAFB-106071, KAFB-106072, KAFB-106032, KAFB-106033, KAFB-106034

AR

AR

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0730	Leave trailer for KAFB-106201 cluster
0735	Arrive at KAFB-106201 cluster
0756	Leave KAFB-106201 cluster for KAFB-106219
0808	Arrive at KAFB-106219

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-20-2021

4. WORK PERFORMED (Continued)	
0815	Leave KAFB-106219 for KAFB-106213 cluster
0816	Arrive at KAFB-106213 cluster
0839	Leave KAFB-106213 cluster for KAFB-106035 cluster
0840	Arrive at KAFB-106035 cluster
0915	Leave KAFB-106035 cluster for KAFB-106022
0918	Arrive at KAFB-106022
0929	Leave KAFB-106022 for KAFB-106103 cluster
0937	Arrive at KAFB-106103 cluster
1000	Leave KAFB-106103 cluster for KAFB-106089 cluster AR
1005	Arrive at KAFB-106089 cluster
1100	Leave KAFB-106089 cluster for KAFB-106085 cluster
1106	Arrive at KAFB-106085 cluster
1128	Leave KAFB-106085 cluster for KAFB-106070 cluster
1129	Arrive at KAFB-106070 cluster
1154	Leave KAFB-106070 cluster for KAFB-106033 cluster
1157	Arrive at KAFB-106033 cluster
1216	Leave KAFB-106033 cluster for ~~KAFB-106~~ AR Trailer
1225	Arrive at ~~KAFB-106~~ AR Trailer

AR

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Amy Rosebrough
Name

Amy Rosebrough
Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #1 - gauging DATE: 1-21-21

WEATHER: low 50s (°F); partly - mostly clear sky

1. ONSITE PERSONNEL (including subcontractors and government employees)

Name	Organization
B. Boeckisch	EA - Site Manager/Supervisor
P. Ferrari	EA - Site Health and Safetly Office
J. Messenger / D. Schmeelk	EA - Team #1
	AB

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☒	MiniRAE 3000 592-915579 Wh0006 ☐
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☐	Solinst Water Level Meter 253053 WH0012 ☒	Geotech Water Level Meter 0001 WH0570 ☐
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0736	Left field office — 0743 Arrived @ KAFB-106222 cluster
0808	Left KAFB-106222 cluster — 0810 Arrived @ KAFB-106225 cluster
0835	Left KAFB-106225 cluster — 0836 Arrived @ KAFB-106026 cluster
0900	Left KAFB-106026 cluster — 0901 Arrived @ KAFB-106041 cluster

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 1-21-21

4. WORK PERFORMED (Continued)	
0923	left KAFB-106041 cluster – 0927 arrived @ KAFB-106055 cluster
0958	left KAFB-106055 cluster – 1006 Arrived @ field office EOD

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

J. Messenger
Name

Signature

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

ROLE: Team #2 - Gauging DATE: 01-21-2021

WEATHER: 53°F cloudy Wind 5 MPH North

1. ONSITE PERSONNEL (including subcontractors and government employees)	
Name	**Organization**
Bernard Bockisch	EA - Site Manager/Supervisor
Peter Ferrari	EA - Site Health and Safetly Office
Gabrielle Begaye	TECH III
Amy Rosebrough	GEO I

2. OPERATING EQUIPMENT

YSI Professional Plus 18L100378 Wh0003 ☐	YSI Professional Plus 15K101396 Wh0001 ☐	YSI Professional Plus 15L100541 Wh0002 ☐
MiniRAE 3000 592-915778 Wh0005 ☐	MiniRAE 3000 592-915790 Wh0004 ☐	MiniRAE 3000 592-915579 Wh0006 ☒
Hach 2100Q 15100C045025 Wh0007 ☐	Hach 2100Q 15100C044633 Wh0009 ☐	Geotech Turbidity Meter 18081855 ☐
Solinst Water Level Meter 350333 WH0567 (750 ft) ☒	Solinst Water Level Meter 253053 WH0012 ☐	Geotech Water Level Meter 0001 WH0570 ☒
Solinst Water Level Meter 350334 WH0566 ☐	Solinst Water Level Meter 253056 WH0571 ☐	☐

3. DAILY SUMMARY (include QC samples collected, deviations from planning documents, converstations with the the public and governmental employees, and problems encountered and remedies applied)

Wells gauged: KAFB-106015, KAFB-106216, KAFB-106217, KAFB-106218, KAFB-106091, KAFB-106092, KAFB-106093, KAFB-106229, KAFB-106025, KAFB-106050, KAFB-106051, KAFB-106049, KAFB-106052, KAFB-106053, KAFB-106054, KAFB-106105, KAFB-106106, KAFB-106107

4. WORK PERFORMED (Indicate location, time, and description of work performed by prime and/or subcontractors)

0732	left trailer to KAFB-106015
0737	Arrived at KAFB-106015
0746	left KAFB-106015 to KAFB-106216 cluster
0749	Arrive at KAFB-106216 cluster

DQCR Page 1 of 2

Reviewed by: Amanda Smith Reviewed date: 3/31/2021

Kirtland AFB Bulk Fuels Facility GWM & IRM - 6360401
Daily Quality Control Report – Non-Construction

DATE: 01-21-2021

4. WORK PERFORMED (Continued)

0814	leave KAFB-106216 cluster for KAFB-106091 cluster
0817	Arrive at KAFB-106091 cluster
0842	leave KAFB-106091 cluster for KAFB-106025
0845	Arrive at KAFB-106025
0855	leave KAFB-106025 for KAFB-106049 cluster
0857	Arrive at KAFB-106049 cluster
0918	leave KAFB-106049 cluster for KAFB-106052 cluster
0921	Arrive KAFB-106052 cluster
0939	leave KAFB-106052 cluster for KAFB-106105 cluster
0941	Arrive at KAFB-106105 cluster
1005	leave KAFB-106105 cluster for trailer
1014	Arrive at trailer

5. CONTRACTOR'S VERIFICATION: I certify that to the best of my knowledge the above report is complete and correct. All equipment used, and work performed during this reporting period is in compliance with the contract plans and specifications noted above.

Name: Gabriella Begaye

Signature:

EA Engineering, Science and Technology Inc., PBC

DQCR Page 2 of 2

Reviewed by: Amanda Smith

Reviewed date: 3/31/2021

Appendix C-2

Groundwater and Light Non-Aqueous Phase Liquid Measurements (January-March 2021)

Table C-2-1
Water Level Meter Calibration Data

	Depth to Water (feet below ground surface)					Difference Between Meters (feet)					
	Interface Probe										
Well Identification	**WH0567/35033**	**WH0566/350334**	**WH0012/253053 (control probe)**	**253056/WH0571**	**Geotech 0001/WH0570**	**253053 and 253056**	**253053 and WH0567**	**253053 and WH0566**	**WH0567 and WH0566**	**253053 and 0001**	**253056 and 0001**
KAFB-106027	471.24	470.99	471.38	471.37	471.49	0.01	0.14	0.39	0.25	-0.11	-0.12
KAFB-106044	471.37	471.14	471.53	471.53	471.63	0	0.16	0.39	0.23	-0.1	-0.1
KAFB-106045	471.09	470.84	471.22	471.2	471.32	0.02	0.13	0.38	0.25	-0.1	-0.12
					Average Difference	0.02	0.14	0.39	0.25	-0.10	-0.12
Correction Factor	**0.14**	**0.39**	**0**	**0**	**-0.10**						

Table C-2-2
Gauging Calibration Corrections, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Date and Time of Measurement	Depth to LNAPL (ft MRP)	Depth to Water (ft MRP)	Water Level Interface Probe Used (Serial Number)	Correction Applied (ft)	Corrected Depth to LNAPL (ft MRP)	Corrected Depth to Water (ft MRP)
KAFB-106001[a]	4857/4838	1/18/2021 19:38	—	467.54	WH0566	0.39	—	467.93
KAFB-106002	4857	1/20/2021 14:00	—	465.42	WH0012	0.00	—	465.42
KAFB-106003	4857	1/20/2021 14:41	—	463.06	WH0012	0.00	—	463.06
KAFB-106004	4857	1/18/2021 20:16	—	468.59	WH0567	0.14	—	468.73
KAFB-106005	4857	1/20/2021 15:28	—	470.50	253056	0.00	—	470.50
KAFB-106006	4857	1/18/2021 18:39	—	474.35	WH0566	0.39	—	474.74
KAFB-106007	4857	1/18/2021 18:21	—	472.77	WH0012	0.00	—	472.77
KAFB-106008	4857	1/18/2021 17:21	—	475.13	253056	0.00	—	475.13
KAFB-106009	4857	1/20/2021 15:33	—	472.23	WH0012	0.00	—	472.23
KAFB-106010	4857	1/20/2021 18:20	—	467.47	253056	0.00	—	467.47
KAFB-106011	4857	1/20/2021 16:23	—	477.23	WH0012	0.00	—	477.23
KAFB-106012R	4857	1/20/2021 15:11	—	468.65	WH0012	0.00	—	468.65
KAFB-106013	4857	1/18/2021 18:35	—	474.07	WH0567	0.14	—	474.21
KAFB-106014	4857	1/20/2021 16:12	—	473.70	WH0566	0.39	—	474.09
KAFB-106015[a]	4857/4838	1/21/2021 14:40	—	468.01	WH0567	0.14	—	468.15
KAFB-106016	4857	1/18/2021 15:40	—	465.16	WH0012	0.00	—	465.16
KAFB-106017[a]	4857/4838	1/20/2021 18:38	—	466.92	WH0566	0.39	—	467.31
KAFB-106018[a]	4857/4838	1/18/2021 19:49	—	460.43	0001	-0.10	—	460.33
KAFB-106019[a]	4857/4838	1/20/2021 18:46	—	479.24	WH0012	0.00	—	479.24
KAFB-106020	4857	1/18/2021 18:23	—	464.79	0001	-0.10	—	464.69
KAFB-106021[a]	4857/4838	1/19/2021 17:38	—	438.47	WH0566	0.39	—	438.86
KAFB-106022[a]	4857/4838	1/20/2021 16:26	—	443.40	WH0567	0.14	—	443.54
KAFB-106023	4857	1/20/2021 16:52	—	453.68	WH0567	0.14	—	453.82
KAFB-106024	4857	1/18/2021 19:25	—	466.63	WH0012	0.00	—	466.63
KAFB-106025[a]	4857/4838	1/21/2021 15:47	—	441.98	WH0567	0.14	—	442.12
KAFB-106026	4857	1/21/2021 15:39	—	447.95	WH0012	0.00	—	447.95
KAFB-106027	4857	1/18/2021 14:39	—	471.38	WH0012	0.00	—	471.38
KAFB-106028	4857	1/20/2021 17:31	—	472.97	253056	0.00	—	472.97
KAFB-106029	4857	1/19/2021 18:06	—	435.42	WH0567	0.14	—	435.56
KAFB-106030	4838	1/19/2021 17:55	—	435.50	WH0567	0.14	—	435.64
KAFB-106031	4814	1/19/2021 17:47	—	435.61	WH0567	0.14	—	435.75
KAFB-106032	4857	1/20/2021 19:12	—	441.31	WH0567	0.14	—	441.45
KAFB-106033	4838	1/20/2021 19:06	—	441.44	WH0567	0.14	—	441.58
KAFB-106034	4814	1/20/2021 19:01	—	442.30	WH0567	0.14	—	442.44
KAFB-106035	4857	1/20/2021 15:59	—	447.30	WH0567	0.14	—	447.44
KAFB-106036	4838	1/20/2021 15:48	—	447.69	WH0567	0.14	—	447.83
KAFB-106037	4838	1/20/2021 15:55	—	448.39	WH0567	0.14	—	448.53
KAFB-106038	4857	1/20/2021 18:54	—	476.32	WH0012	0.00	—	476.32
KAFB-106039	4838	1/20/2021 18:58	—	476.14	WH0012	0.00	—	476.14
KAFB-106040	4814	1/20/2021 19:01	—	475.05	WH0012	0.00	—	475.05
KAFB-106041	4857	1/21/2021 16:05	—	449.48	WH0012	0.00	—	449.48
KAFB-106042	4857	1/21/2021 16:16	—	449.22	WH0012	0.00	—	449.22
KAFB-106043	4814	1/21/2021 16:12	—	449.44	WH0012	0.00	—	449.44
KAFB-106044	4838	1/18/2021 15:12	—	471.53	WH0012	0.00	—	471.53
KAFB-106045	4814	1/18/2021 15:01	—	471.22	WH0012	0.00	—	471.22
KAFB-106046	4857	1/18/2021 17:50	—	476.37	WH0012	0.00	—	476.37
KAFB-106047	4838	1/18/2021 17:56	—	476.47	WH0012	0.00	—	476.47
KAFB-106048	4814	1/18/2021 18:00	—	476.20	WH0012	0.00	—	476.20
KAFB-106049	4857	1/21/2021 16:01	—	440.41	WH0567	0.14	—	440.55
KAFB-106050	4838	1/21/2021 16:12	—	439.82	WH0567	0.14	—	439.96
KAFB-106051	4814	1/21/2021 16:08	—	440.11	WH0567	0.14	—	440.25
KAFB-106052	4857	1/21/2021 16:35	—	443.59	WH0567	0.14	—	443.73
KAFB-106053	4838	1/21/2021 16:31	—	443.53	WH0567	0.14	—	443.67
KAFB-106054	4814	1/21/2021 16:23	—	443.13	WH0567	0.14	—	443.27
KAFB-106055	4857	1/21/2021 16:29	—	450.31	WH0012	0.00	—	450.31
KAFB-106057	4838	1/21/2021 16:45	—	450.67	WH0012	0.00	—	450.67
KAFB-106058	4814	1/21/2021 16:52	—	451.23	WH0012	0.00	—	451.23
KAFB-106059	4857	1/18/2021 16:31	471.09	471.10	253056	0.00	471.09	471.10
KAFB-106060	4838	1/18/2021 16:43	—	468.64	WH0012	0.00	—	468.64
KAFB-106061	4814	1/18/2021 16:38	—	468.64	WH0012	0.00	—	468.64
KAFB-106062	4814	1/18/2021 17:32	—	474.66	WH0012	0.00	—	474.66
KAFB-106063[b]	4838	NM	NM	NM	NM	NM	NM	NM
KAFB-106064[b]	4857	NM	NM	NM	NM	NM	NM	NM
KAFB-106065	4838	1/20/2021 17:44	—	472.44	WH0566	0.39	—	472.83
KAFB-106066	4814	1/20/2021 17:27	—	473.12	WH0012	0.00	—	473.12
KAFB-106067	4857	1/20/2021 18:08	—	471.63	WH0566	0.39	—	472.02
KAFB-106068	4814	1/20/2021 18:00	—	471.88	WH0012	0.00	—	471.88
KAFB-106069	4838	1/20/2021 18:05	—	471.64	WH0012	0.00	—	471.64
KAFB-106070	4857	1/20/2021 18:34	—	443.46	WH0567	0.14	—	443.60
KAFB-106071	4814	1/20/2021 18:49	—	445.66	WH0567	0.14	—	445.80
KAFB-106072	4838	1/20/2021 18:42	—	444.20	0001	-0.10	—	444.10
KAFB-106073	4838	1/18/2021 18:11	—	463.50	WH0567	0.14	—	463.64
KAFB-106074	4814	1/18/2021 18:05	—	464.21	WH0567	0.14	—	464.35
KAFB-106075	4857	1/18/2021 18:00	—	464.20	WH0567	0.14	—	464.34
KAFB-106076	4857	1/18/2021 20:17	467.76	467.77	WH0566	0.39	468.15	468.16

Table C-2-2
Gauging Calibration Corrections, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Date and Time of Measurement	Depth to LNAPL (ft MRP)	Depth to Water (ft MRP)	Water Level Interface Probe Used (Serial Number)	Correction Applied (ft)	Corrected Depth to LNAPL (ft MRP)	Corrected Depth to Water (ft MRP)
KAFB-106077	4838	1/18/2021 20:26	—	469.29	WH0012	0.00	—	469.29
KAFB-106078	4814	1/18/2021 20:14	—	468.45	WH0012	0.00	—	468.45
KAFB-106079	4857	1/20/2021 15:58	—	473.68	253056	0.00	—	473.68
KAFB-106080	4838	1/20/2021 15:53	—	471.86	WH0566	0.39	—	472.25
KAFB-106081	4814	1/20/2021 15:48	—	473.41	WH0012	0.00	—	473.41
KAFB-106082	4857	1/18/2021 19:40	—	459.48	WH0567	0.14	—	459.62
KAFB-106083	4838	1/18/2021 19:20	—	459.13	WH0567	0.14	—	459.27
KAFB-106084	4814	1/18/2021 19:29	—	461.94	WH0567	0.14	—	462.08
KAFB-106085	4857	1/20/2021 18:09	—	441.77	WH0567	0.14	—	441.91
KAFB-106086	4838	1/20/2021 18:18	—	442.15	WH0567	0.14	—	442.29
KAFB-106087	4814	1/20/2021 18:23	—	441.35	WH0567	0.14	—	441.49
KAFB-106088	4857	1/20/2021 17:09	—	449.49	0001	-0.10	—	449.39
KAFB-106089	4838	1/20/2021 17:16	—	448.96	WH0567	0.14	—	449.10
KAFB-106090	4814	1/20/2021 17:25	—	447.80	WH0567	0.14	—	447.94
KAFB-106091	4857	1/21/2021 15:20	—	439.55	WH0567	0.14	—	439.69
KAFB-106092	4838	1/21/2021 15:33	—	439.45	WH0567	0.14	—	439.59
KAFB-106093	4814	1/21/2021 15:38	—	439.39	WH0567	0.14	—	439.53
KAFB-106094	4857	1/20/2021 17:05	—	468.73	WH0566	0.39	—	469.12
KAFB-106095	4838	1/20/2021 17:10	—	468.68	WH0012	0.00	—	468.68
KAFB-106096	4814	1/20/2021 17:01	—	469.27	WH0012	0.00	—	469.27
KAFB-106097	4838	1/18/2021 18:41	—	471.01	WH0567	0.14	—	471.15
KAFB-106098	4814	1/18/2021 18:45	—	471.12	WH0567	0.14	—	471.26
KAFB-106099	4838	1/18/2021 20:22	—	465.55	WH0567	0.14	—	465.69
KAFB-106100	4814	1/18/2021 20:29	—	465.56	WH0567	0.14	—	465.70
KAFB-106101	4838	1/20/2021 14:35	—	463.30	WH0012	0.00	—	463.30
KAFB-106102	4814	1/20/2021 14:47	—	463.42	WH0012	0.00	—	463.42
KAFB-106103	4838	1/20/2021 16:46	—	453.93	WH0567	0.14	—	454.07
KAFB-106104	4814	1/20/2021 16:35	—	453.36	WH0567	0.14	—	453.50
KAFB-106105	4838	1/21/2021 16:54	—	447.01	WH0567	0.14	—	447.15
KAFB-106106	4857	1/21/2021 17:01	—	446.89	WH0567	0.14	—	447.03
KAFB-106107	4814	1/21/2021 16:47	—	447.10	WH0567	0.14	—	447.24
KAFB-106148-484[c]	4857	1/18/2021 19:31	—	467.52	253056	0.00	—	467.52
KAFB-106149-484[c]	4857	1/18/2021 19:45	—	469.49	253056	0.00	—	469.49
KAFB-106150-484[c]	4857	1/18/2021 20:40	467.68	468.01	253056	0.00	467.68	468.01
KAFB-106151-484[c]	4857	1/18/2021 16:14	—	469.44	253056	0.00	—	469.44
KAFB-106152-484[c]	4857	1/18/2021 17:01	—	471.22	253056	0.00	—	471.22
KAFB-106153-484[c]	4857	1/18/2021 20:03	—	472.65	253056	0.00	—	472.65
KAFB-106154-484[c]	4857	1/18/2021 19:58	470.73	470.95	253056	0.00	470.73	470.95
KAFB-106155-484[c]	4857	1/18/2021 18:30	—	471.11	253056	0.00	—	471.11
KAFB-106156-484[c]	4857	1/18/2021 15:51	—	464.36	253056	0.00	—	464.36
KAFB-106201	4857	1/20/2021 14:43	—	483.91	WH0567	0.14	—	484.05
KAFB-106202	4838	1/20/2021 14:48	—	484.63	WH0567	0.14	—	484.77
KAFB-106203	4814	1/20/2021 14:53	—	484.73	WH0567	0.14	—	484.87
KAFB-106204	4857	1/18/2021 17:41	—	458.13	WH0567	0.14	—	458.27
KAFB-106205	4838	1/18/2021 17:32	—	458.57	WH0567	0.14	—	458.71
KAFB-106206	4814	1/18/2021 17:25	—	458.72	WH0567	0.14	—	458.86
KAFB-106207	4857	1/18/2021 15:51	—	470.15	WH0567	0.14	—	470.29
KAFB-106208	4838	1/18/2021 16:01	—	469.87	WH0567	0.14	—	470.01
KAFB-106209	4814	1/18/2021 16:08	—	469.26	WH0567	0.14	—	469.40
KAFB-106211[c,d]	4857	1/20/2021 18:35	Dry	Dry	WH0012	0.00	Dry	Dry
KAFB-106212	4814	1/20/2021 16:09	—	448.01	WH0567	0.14	—	448.15
KAFB-106213	4857	1/20/2021 15:36	—	450.81	WH0567	0.14	—	450.95
KAFB-106214	4838	1/20/2021 15:29	—	450.95	WH0567	0.14	—	451.09
KAFB-106215	4814	1/20/2021 15:20	—	451.19	WH0567	0.14	—	451.33
KAFB-106216	4857	1/21/2021 15:06	—	459.30	WH0567	0.14	—	459.44
KAFB-106217	4838	1/21/2021 15:01	—	459.20	WH0567	0.14	—	459.34
KAFB-106218	4814	1/21/2021 14:55	—	459.34	WH0567	0.14	—	459.48
KAFB-106219	4857	1/20/2021 15:06	—	466.28	WH0567	0.14	—	466.42
KAFB-106220	4838	1/18/2021 17:11	—	465.87	WH0567	0.14	—	466.01
KAFB-106221	4814	1/18/2021 17:06	—	465.64	WH0567	0.14	—	465.78
KAFB-106222	4857	1/21/2021 14:48	—	459.01	WH0012	0.00	—	459.01
KAFB-106223	4838	1/21/2021 14:55	—	459.64	WH0012	0.00	—	459.64
KAFB-106224	4814	1/21/2021 15:05	—	460.73	WH0012	0.00	—	460.73
KAFB-106225	4857	1/21/2021 15:12	—	452.26	WH0012	0.00	—	452.26
KAFB-106226	4838	1/21/2021 15:23	—	452.82	WH0012	0.00	—	452.82
KAFB-106227	4814	1/21/2021 15:29	—	453.52	WH0012	0.00	—	453.52
KAFB-106229[a,c]	4857/4838	1/21/2021 15:26	—	439.27	WH0567	0.14	—	439.41
KAFB-106230	4814	1/21/2021 15:46	—	450.13	WH0012	0.00	—	450.13
KAFB-106231	4857	1/19/2021 18:33	—	453.05	WH0567	0.14	—	453.19
KAFB-106232	4814	1/19/2021 18:23	—	452.54	WH0567	0.14	—	452.68
KAFB-106235-438	4857	1/18/2021 16:42	—	440.74	WH0567	0.14	—	440.88
KAFB-106235-472	4838	1/18/2021 16:48	—	440.72	WH0567	0.14	—	440.86
KAFB-106235-501	4814	1/18/2021 16:52	—	440.77	WH0567	0.14	—	440.91
KAFB-106236-436	4857	1/18/2021 16:21	—	440.86	WH0567	0.14	—	441.00
KAFB-106236-470	4838	1/18/2021 16:26	—	440.80	WH0567	0.14	—	440.94
KAFB-106236-499	4814	1/18/2021 16:29	—	440.85	WH0567	0.14	—	440.99
KAFB-106240-449	4857	1/18/2021 20:01	—	470.98	WH0567	0.14	—	471.12
KAFB-106241-428	4857	1/21/2021 16:36	—	449.89	WH0012	0.00	—	449.89
KAFB-106242-418	4857	1/19/2021 17:29	—	440.58	WH0567	0.14	—	440.72
KAFB-106243-425	4857	1/20/2021 17:31	—	445.52	WH0567	0.14	—	445.66
KAFB-106244-445	4857	1/18/2021 20:30	—	466.45	WH0567	0.14	—	466.59
KAFB-106245-460	4857	1/20/2021 16:37	—	485.52	WH0012	0.00	—	485.52

Table C-2-2
Gauging Calibration Corrections, Q1 2021

Well Location ID	Reference Elevation Interval (ft AMSL)	Date and Time of Measurement	Depth to LNAPL (ft MRP)	Depth to Water (ft MRP)	Water Level Interface Probe Used (Serial Number)	Correction Applied (ft)	Corrected Depth to LNAPL (ft MRP)	Corrected Depth to Water (ft MRP)
KAFB-106247-450	4857	1/18/2021 18:11	—	474.90	WH0012	0.00	—	474.90
KAFB-106S1-447	4857	1/18/2021 20:31	—	468.32	253056	0.00	—	468.32
KAFB-106S2-451	4857	1/18/2021 17:15	—	475.84	253056	0.00	—	475.84
KAFB-106S3-449	4857	1/20/2021 16:07	—	475.38	253056	0.00	—	475.38
KAFB-106S4-446	4857	1/20/2021 15:22	—	470.24	WH0012	0.00	—	470.24
KAFB-106S5-446	4857	1/20/2021 18:24	—	467.65	253056	0.00	—	467.65
KAFB-106S7-451	4857	1/20/2021 17:35	—	472.96	253056	0.00	—	472.96
KAFB-106S8-451	4857	1/18/2021 18:43	—	474.74	253056	0.00	—	474.74
KAFB-106S9-447	4857	1/18/2021 16:51	—	469.48	253056	0.00	—	469.48
KAFB-106S10-443	4857	1/15/2021 08:30	—	472.14	23056	0.00	—	472.14
KAFB-3411	4857	1/18/2021 16:03	—	466.44	WH0012	0.00	—	466.44

[a] Well used in analyses for both REI 4857 and 4838.

[b] Well was not gauged due to presence of monitoring equipment.

[c] Well not permanently designated in REI listed.

[d] Well was gauged and found to be dry.

AMSL = above mean sea level

ft = foot/feet

ID = identification

NA = not applicable

NM = not measured

LNAPL = light non-aqueous phase liquid

MRP = measurement reference point

REI = reference elevation interval

— = LNAPL not detected

Table C-2-3
Raw Well Gauging Data

Well Location ID	Previous Quarter: Depth to NAPL (ft MRP)	Previous Quarter: DTW (ft MRP)	Date/Time	PID (ppm)	Depth to NAPL (ft MRP)	DTW (ft MRP)	WL Meter Used (Serial No.)	Correction factor	Contact	Reference Point	Signature	Well Designation	Hazardous Code	Team	In Network	Notes	Corrected DTW	Change
KAFB-106001	<Null>	468.44	1/18/2021 19:38	0.1	<Null>	467.54	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TWV	DS/JM	Groundwater Monitoring	Intermediate	Team 1	Yes	467.54	467.93	-0.51
KAFB-106002	<Null>	465.48	1/20/2021 14:00	0	<Null>	465.42	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	465.42	-0.06
KAFB-106003	<Null>	463.10	1/20/2021 14:41	0	<Null>	463.06	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	VA Proximal, KAFB-015 Sentinel	Clean	Team 1	Yes	<Null>	463.06	-0.04
KAFB-106004	<Null>	469.38	1/18/2021 20:16	0	<Null>	468.59	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	EA Barricade	TOPC	AR	VA Proximal	Clean	Team 2	Yes	<Null>	468.73	-0.65
KAFB-106005	<Null>	470.72	1/20/2021 15:28	0	<Null>	470.50	Hazardous - WH0571 - 253056 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	470.5	-0.22
KAFB-106006	<Null>	475.35	1/18/2021 18:39	0	<Null>	474.35	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TWV	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	474.74	-0.61
KAFB-106007	<Null>	473.42	1/18/2021 18:21	0	<Null>	472.77	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	472.77	-0.65
KAFB-106008	<Null>	475.72	1/18/2021 17:21	0	<Null>	475.13	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	475.13	-0.59
KAFB-106009	<Null>	472.37	1/20/2021 15:33	0	<Null>	472.23	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	472.23	-0.14
KAFB-106010	<Null>	467.77	1/20/2021 18:20	0	<Null>	467.47	Hazardous - WH0571 - 253056 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	467.47	-0.3
KAFB-106011	<Null>	477.38	1/20/2021 16:23	0	<Null>	477.23	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	477.23	-0.15
KAFB-106012R	<Null>	468.77	1/20/2021 15:11	0	<Null>	468.65	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	468.65	-0.12
KAFB-106013	<Null>	474.79	1/18/2021 18:35	0	<Null>	474.07	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TOPC	AR	VA Proximal	Clean	Team 2	Yes	<Null>	474.21	-0.58
KAFB-106014	<Null>	474.33	1/20/2021 16:12	0	<Null>	473.70	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TOPC	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	474.09	-0.24
KAFB-106015	<Null>	469.11	1/21/2021 14:40	0	<Null>	468.01	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TOPC	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	468.15	-0.96
KAFB-106016	<Null>	465.71	1/18/2021 15:40	0	<Null>	465.16	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	465.16	-0.55
KAFB-106017	<Null>	467.58	1/20/2021 18:38	0	<Null>	466.92	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TOPC	DS/JM	Signal	Intermediate	Team 1	Yes	<Null>	467.31	-0.27
KAFB-106018	<Null>	460.91	1/18/2021 19:49	0	<Null>	460.43	Intermediate - WHO570 - 0001 - Geotech 500 ft	0.1		TOPC	AR	Signal	Intermediate	Team 2	Yes	<Null>	460.33	-0.58
KAFB-106019	<Null>	479.48	1/20/2021 18:46	0	<Null>	479.24	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	479.24	-0.24
KAFB-106020	<Null>	465.18	1/18/2021 18:23	0	<Null>	464.79	Intermediate - WHO570 - 0001 - Geotech 500 ft	0.1	Call VA Police	TWV	AR	Groundwater Monitoring	Intermediate	Team 2	Yes	<Null>	464.69	-0.49
KAFB-106021	<Null>	439.18	1/19/2021 17:38	0	<Null>	438.47	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39	Barricades by SWSS	TWV	GB	Groundwater Monitoring	Intermediate	Team 1	Yes	<Null>	438.86	-0.32
KAFB-106022	<Null>	443.88	1/20/2021 16:26	0	<Null>	443.40	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	443.54	-0.34
KAFB-106023	<Null>	454.20	1/20/2021 16:52	0	<Null>	453.68	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	453.82	-0.38
KAFB-106024	<Null>	467.21	1/18/2021 19:25	0	<Null>	466.63	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	466.63	-0.58
KAFB-106025	<Null>	442.58	1/21/2021 15:47	0	<Null>	441.98	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	442.12	-0.46
KAFB-106026	<Null>	448.73	1/21/2021 15:39	0	<Null>	447.95	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	447.95	-0.78
KAFB-106027	<Null>	471.95	1/18/2021 14:39	0	<Null>	471.38	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	471.38	-0.57
KAFB-106028	<Null>	473.08	1/20/2021 17:31	0	<Null>	472.97	Hazardous - WH0571 - 253056 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	472.97	-0.11
KAFB-106028	<Null>	473.08	<Null>	<Null>	<Null>	<Null>	<Null>			TOPC	DS	Source Area	Hazardous	<Null>	Yes	2nd instance of 028, to be removed		
KAFB-106029	<Null>	435.83	1/19/2021 18:06	0	<Null>	435.42	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 1	Yes	Did not populate previous quarter's DTW	435.56	-0.27
KAFB-106030	<Null>	435.93	1/19/2021 17:55	0	<Null>	435.50	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 1	Yes	<Null>	435.64	-0.29
KAFB-106031	<Null>	436.07	1/19/2021 17:47	0	<Null>	435.61	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 1	Yes	<Null>	435.75	-0.32
KAFB-106032	<Null>	441.47	1/20/2021 19:12	0	<Null>	441.31	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Gibson Med. Ctr.	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	441.45	-0.02
KAFB-106033	<Null>	441.61	1/20/2021 19:06	0	<Null>	441.44	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Gibson Med. Ctr.	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	441.58	-0.03
KAFB-106034	<Null>	442.47	1/20/2021 19:01	0	<Null>	442.30	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Gibson Med. Ctr.	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	442.44	-0.03
KAFB-106035	<Null>	447.88	1/20/2021 15:59	0	<Null>	447.30	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Church - make sure you see if anyone is present at the church to inform them that you are there	TWV	AR	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well	Clean	Team 2	Yes	<Null>	447.44	-0.44
KAFB-106036	<Null>	448.35	1/20/2021 15:48	0	<Null>	447.69	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well	Clean	Team 2	Yes	<Null>	447.83	-0.52
KAFB-106037	<Null>	449.00	1/20/2021 15:55	0	<Null>	448.39	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well	Clean	Team 2	Yes	<Null>	448.53	-0.47

Table C-2-3
Raw Well Gauging Data

Well Location ID	Previous Quarter: Depth to NAPL (ft MRP)	Previous Quarter: DTW (ft MRP)	Date/Time	PID (ppm)	Depth to NAPL (ft MRP)	DTW (ft MRP)	WL Meter Used (Serial No.)	Correction factor	Contact	Reference Point	Signature	Well Designation	Hazardous Code	Team	In Network	Notes	Corrected DTW	Change
KAFB-106038	<Null>	476.66	1/20/2021 18:54	0	<Null>	476.32	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Signal	Clean	Team 1	Yes	<Null>	476.32	-0.34
KAFB-106039	<Null>	476.48	1/20/2021 18:58	0	<Null>	476.14	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	476.14	-0.34
KAFB-106040	<Null>	475.40	1/20/2021 19:01	0	<Null>	475.05	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	475.05	-0.35
KAFB-106041	<Null>	450.19	1/21/2021 16:05	0	<Null>	449.48	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	449.48	-0.71
KAFB-106042	<Null>	449.91	1/21/2021 16:16	0	<Null>	449.22	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	449.22	-0.69
KAFB-106043	<Null>	450.13	1/21/2021 16:12	0	<Null>	449.44	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	449.44	-0.69
KAFB-106044	<Null>	472.13	1/18/2021 15:12	0	<Null>	471.53	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	471.53	-0.6
KAFB-106045	<Null>	471.82	1/18/2021 15:01	0	<Null>	471.22	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	471.22	-0.6
KAFB-106046	<Null>	477.08	1/18/2021 17:50	0	<Null>	476.37	Clean - WH0012 - 253053 - Solinst 500 ft	0	EA Barricade	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	476.37	-0.71
KAFB-106047	<Null>	477.12	1/18/2021 17:56	0	<Null>	476.47	Clean - WH0012 - 253053 - Solinst 500 ft	0	EA Barricade	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	476.47	-0.65
KAFB-106048	<Null>	476.85	1/18/2021 18:00	0	<Null>	476.20	Clean - WH0012 - 253053 - Solinst 500 ft	0	EA Barricade	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	476.2	-0.65
KAFB-106049	<Null>	441.08	1/21/2021 16:01	0	<Null>	440.41	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.55	-0.53
KAFB-106050	<Null>	440.49	1/21/2021 16:12	0	<Null>	439.82	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	439.96	-0.53
KAFB-106051	<Null>	440.78	1/21/2021 16:08	0	<Null>	440.11	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.25	-0.53
KAFB-106052	<Null>	444.33	1/21/2021 16:35	0	<Null>	443.59	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	443.73	-0.6
KAFB-106053	<Null>	444.26	1/21/2021 16:31	0	<Null>	443.53	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	443.67	-0.59
KAFB-106054	<Null>	443.90	1/21/2021 16:23	0	<Null>	443.13	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	443.27	-0.63
KAFB-106055	<Null>	451.22	1/21/2021 16:29	0	<Null>	450.31	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	450.31	-0.91
KAFB-106057	<Null>	451.62	1/21/2021 16:45	0	<Null>	450.67	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	450.67	-0.95
KAFB-106058	<Null>	452.17	1/21/2021 16:52	0	<Null>	451.23	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	451.23	-0.94
KAFB-106059	<Null>	471.88	1/18/2021 16:31	0	471.09	471.10	Hazardous - WH0571 - 253056 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	471.1	-0.78
KAFB-106060	<Null>	469.29	1/18/2021 16:43	0	<Null>	468.64	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS	Source Area	Clean	Team 1	Yes	<Null>	468.64	-0.65
KAFB-106061	<Null>	469.25	1/18/2021 16:38	0	<Null>	468.64	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	468.64	-0.61
KAFB-106062	<Null>	475.30	1/18/2021 17:32	0	<Null>	474.66	Clean - WH0012 - 253053 - Solinst 500 ft	0	APTIM	TOPC	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	474.66	-0.64
KAFB-106063	<Null>	<Null>	1/18/2021 17:39	<Null>	<Null>	<Null>	<Null>		APTIM	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	Equipment in well - did not gauge		
KAFB-106064	<Null>	<Null>	1/18/2021 17:37	<Null>	<Null>	<Null>	<Null>		APTIM	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	Equipment in well - did not gauge		
KAFB-106065	<Null>	473.17	1/20/2021 17:44	0	<Null>	472.44	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39	USS Bullhead	TWV	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	472.83	-0.34
KAFB-106066	<Null>	473.33	1/20/2021 17:27	0	<Null>	473.12	Clean - WH0012 - 253053 - Solinst 500 ft	0	USS Bullhead	TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	473.12	-0.21
KAFB-106067	<Null>	472.13	1/20/2021 18:08	0	<Null>	471.63	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TWV	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	472.02	-0.11
KAFB-106068	<Null>	472.08	1/20/2021 18:00	0	<Null>	471.88	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	471.88	-0.2
KAFB-106069	<Null>	471.84	1/20/2021 18:05	0	<Null>	471.64	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	471.64	-0.2
KAFB-106070	<Null>	443.86	1/20/2021 18:34	0	<Null>	443.46	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	443.6	-0.26
KAFB-106071	<Null>	446.08	1/20/2021 18:49	0	<Null>	445.66	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	445.8	-0.28
KAFB-106072	<Null>	444.25	1/20/2021 18:42	0	<Null>	444.20	Intermediate - WHO570 - 0001 - Geotech 500 ft	0.1		TWV	AR	Groundwater Monitoring	Intermediate	Team 2	Yes	<Null>	444.1	-0.15
KAFB-106073	<Null>	464.21	1/18/2021 18:11	0	<Null>	463.50	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	463.64	-0.57
KAFB-106074	<Null>	464.95	1/18/2021 18:05	0	<Null>	464.21	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	464.35	-0.6
KAFB-106075	<Null>	464.94	1/18/2021 18:00	0	<Null>	464.20	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	464.34	-0.6
KAFB-106076	<Null>	468.78	1/18/2021 20:17	3.2	467.76	467.77	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TWV	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	468.16	-0.62
KAFB-106077	<Null>	469.94	1/18/2021 20:26	0	<Null>	469.29	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	469.29	-0.65
KAFB-106078	<Null>	469.08	1/18/2021 20:14	0	<Null>	468.45	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	468.45	-0.63
KAFB-106079	<Null>	473.86	1/20/2021 15:58	0	<Null>	473.68	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	473.68	-0.18
KAFB-106080	<Null>	472.31	1/20/2021 15:53	0	<Null>	471.86	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TOPC	DS/JM	Source Area	Intermediate	Team 1	Yes	<Null>	472.25	-0.06

Table C-2-3
Raw Well Gauging Data

Well Location ID	Previous Quarter: Depth to NAPL (ft MRP)	Previous Quarter: DTW (ft MRP)	Date/Time	PID (ppm)	Depth to NAPL (ft MRP)	DTW (ft MRP)	WL Meter Used (Serial No.)	Correction factor	Contact	Reference Point	Signature	Well Designation	Hazardous Code	Team	In Network	Notes	Corrected DTW	Change
KAFB-106081	<Null>	473.59	1/20/2021 15:48	0	<Null>	473.41	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	473.41	-0.18
KAFB-106082	<Null>	460.26	1/18/2021 19:40	0	<Null>	459.48	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	459.62	-0.64
KAFB-106083	<Null>	459.91	1/18/2021 19:20	0	<Null>	459.13	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	459.27	-0.64
KAFB-106084	<Null>	462.74	1/18/2021 19:29	0	<Null>	461.94	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	GB	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	462.08	-0.66
KAFB-106085	<Null>	442.08	1/20/2021 18:09	0	<Null>	441.77	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	441.91	-0.17
KAFB-106086	<Null>	442.46	1/20/2021 18:18	0	<Null>	442.15	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	442.29	-0.17
KAFB-106087	<Null>	441.69	1/20/2021 18:23	0	<Null>	441.35	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	441.49	-0.2
KAFB-106088	<Null>	449.56	1/20/2021 17:09	0	<Null>	449.49	Intermediate - WHO570 - 0001 - Geotech 500 ft	0.1		TWV	AR	Groundwater Monitoring	Intermediate	Team 2	Yes	<Null>	449.39	-0.17
KAFB-106089	<Null>	449.39	1/20/2021 17:16	0	<Null>	448.96	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	449.1	-0.29
KAFB-106090	<Null>	448.26	1/20/2021 17:25	0	<Null>	447.80	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	447.94	-0.32
KAFB-106091	<Null>	440.74	1/21/2021 15:20	0	<Null>	439.55	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	439.69	-1.05
KAFB-106092	<Null>	441.12	1/21/2021 15:33	0	<Null>	439.45	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	GB	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	439.59	-1.53
KAFB-106093	<Null>	440.54	1/21/2021 15:38	0	<Null>	439.39	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	439.53	-1.01
KAFB-106094	<Null>	469.20	1/20/2021 17:05	0	<Null>	468.73	Intermediate - WH0566 - 350334 - Solinst 500 ft	-0.39		TWV	DS/JM	Groundwater Monitoring	Intermediate	Team 1	Yes	<Null>	469.12	-0.08
KAFB-106095	<Null>	468.82	1/20/2021 17:10	0	<Null>	468.68	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	468.68	-0.14
KAFB-106096	<Null>	469.42	1/20/2021 17:01	0	<Null>	469.27	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	469.27	-0.15
KAFB-106097	<Null>	471.71	1/18/2021 18:41	0	<Null>	471.01	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	471.15	-0.56
KAFB-106098	<Null>	471.84	1/18/2021 18:45	0	<Null>	471.12	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Call VA Police	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	471.26	-0.58
KAFB-106099	<Null>	466.33	1/18/2021 20:22	0	<Null>	465.55	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	EA Barricade	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	465.69	-0.64
KAFB-106100	<Null>	466.38	1/18/2021 20:29	0	<Null>	465.56	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	EA Barricade	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	465.7	-0.68
KAFB-106101	<Null>	463.37	1/20/2021 14:35	0	<Null>	463.30	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	VA Proximal, KAFB-015 Sentinel	Clean	Team 1	Yes	<Null>	463.3	-0.07
KAFB-106102	<Null>	463.48	1/20/2021 14:47	0	<Null>	463.42	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	VA Proximal, KAFB-015 Sentinel	Clean	Team 1	Yes	463.42	463.42	-0.06
KAFB-106103	<Null>	454.45	1/20/2021 16:46	0	<Null>	453.93	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	454.07	-0.38
KAFB-106104	<Null>	453.90	1/20/2021 16:35	0	<Null>	453.36	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	453.5	-0.4
KAFB-106105	<Null>	447.73	1/21/2021 16:54	0	<Null>	447.01	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	447.15	-0.58
KAFB-106106	<Null>	447.62	1/21/2021 17:01	0	<Null>	446.89	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	447.03	-0.59
KAFB-106107	<Null>	447.83	1/21/2021 16:47	0	<Null>	447.10	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	447.24	-0.59
KAFB-106148-484	<Null>	467.81	1/18/2021 19:31	4.9	<Null>	467.52	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	<Null>	<Null>	Team 1	Yes	<Null>	467.52	-0.29
KAFB-106149-484	<Null>	469.89	1/18/2021 19:45	4.4	<Null>	469.49	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	JM/DS	Source Area	Hazardous	Team 1	Yes	<Null>	469.49	-0.4
KAFB-106150-484	<Null>	468.07	1/18/2021 20:40	0.4	467.68	468.01	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	<Null>	<Null>	Team 1	Yes	Previously listed as Haz	468.01	-0.06
KAFB-106151-484	<Null>	469.78	1/18/2021 16:14	4	<Null>	469.44	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS	Source Area	Hazardous	Team 1	Yes	<Null>	469.44	-0.34
KAFB-106152-484	<Null>	471.63	1/18/2021 17:01	1.2	<Null>	471.22	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	471.22	-0.41
KAFB-106153-484	<Null>	473.01	1/18/2021 20:03	2.8	<Null>	472.65	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	472.65	-0.36
KAFB-106154-484	<Null>	471.09	1/18/2021 19:58	3.8	470.73	470.95	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	<Null>	<Null>	Team 1	Yes	Listed as Haz on previous quarter's paperwork	470.95	-0.14
KAFB-106155-484	<Null>	471.50	1/18/2021 18:30	4	<Null>	471.11	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	<Null>	<Null>	Team 1	Yes	<Null>	471.11	-0.39
KAFB-106156-484	<Null>	464.76	1/18/2021 15:51	3.4	<Null>	464.36	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS	<Null>	<Null>	Team 1	Yes	Previously gauged as Haz well.	464.36	-0.4
KAFB-106201	<Null>	488.10	1/20/2021 14:43	0	<Null>	483.91	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Do early in the morning and ensure production well is pumping	TOPC	AR	KAFB-003 Sentinel	Clean	Team 2	Yes	<Null>	484.05	-4.05
KAFB-106202	<Null>	488.84	1/20/2021 14:48	0	<Null>	484.63	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TOPC	GB	KAFB-003 Sentinel	Clean	Team 2	Yes	Pump is off	484.77	-4.07
KAFB-106203	<Null>	488.96	1/20/2021 14:53	0	<Null>	484.73	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TOPC	AR	KAFB-003 Sentinel	Clean	Team 2	Yes	<Null>	484.87	-4.09
KAFB-106204	<Null>	459.94	1/18/2021 17:41	0	<Null>	458.13	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	458.27	-1.67

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Well Location ID	Previous Quarter: Depth to NAPL (ft MRP)	Previous Quarter: DTW (ft MRP)	Date/Time	PID (ppm)	Depth to NAPL (ft MRP)	DTW (ft MRP)	WL Meter Used (Serial No.)	Correction factor	Contact	Reference Point	Signature	Well Designation	Hazardous Code	Team	In Network	Notes	Corrected DTW	Change
KAFB-106205	<Null>	460.39	1/18/2021 17:32	0	<Null>	458.57	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	458.71	-1.68
KAFB-106206	<Null>	460.55	1/18/2021 17:25	0	<Null>	458.72	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	458.86	-1.69
KAFB-106207	<Null>	472.86	1/18/2021 15:51	0	<Null>	470.15	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	470.29	-2.57
KAFB-106208	<Null>	472.56	1/18/2021 16:01	0	<Null>	469.87	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	GB	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	470.01	-2.55
KAFB-106209	<Null>	471.87	1/18/2021 16:08	0	<Null>	469.26	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	469.4	-2.47
KAFB-106211	<Null>	0.00	1/20/2021 18:35	0	<Null>	<Null>	Clean - WH0012 - 253053 - Solinst 500 ft		<Null>	TWV	DS/JM	Groundwater Monitoring	<Null>	Team 1	Yes	Dry		
KAFB-106212	<Null>	448.59	1/20/2021 16:09	0	<Null>	448.01	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Church - make sure you see if anyone is present at the church to inform them that you are there	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	448.15	-0.44
KAFB-106213	<Null>	451.44	1/20/2021 15:36	0	<Null>	450.81	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	450.95	-0.49
KAFB-106214	<Null>	451.58	1/20/2021 15:29	0	<Null>	450.95	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	451.09	-0.49
KAFB-106215	<Null>	451.83	1/20/2021 15:20	0	<Null>	451.19	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	451.33	-0.5
KAFB-106216	<Null>	460.53	1/21/2021 15:06	0	<Null>	459.30	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	459.44	-1.09
KAFB-106217	<Null>	460.45	1/21/2021 15:01	0	<Null>	459.20	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	459.34	-1.11
KAFB-106218	<Null>	460.61	1/21/2021 14:55	0	<Null>	459.34	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14		TWV	AR	Downgradient Proximal (Seasonal)	Clean	Team 2	Yes	<Null>	459.48	-1.13
KAFB-106219	<Null>	467.59	1/20/2021 15:06	0	<Null>	466.28	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	466.42	-1.17
KAFB-106220	<Null>	467.50	1/18/2021 17:11	0	<Null>	465.87	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	466.01	-1.49
KAFB-106221	<Null>	467.25	1/18/2021 17:06	0	<Null>	465.64	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	465.78	-1.47
KAFB-106222	<Null>	460.38	1/21/2021 14:48	0	<Null>	459.01	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Downgradient Proximal (Seasonal)	Clean	Team 1	Yes	<Null>	459.01	-1.37
KAFB-106223	<Null>	461.01	1/21/2021 14:55	0	<Null>	459.64	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	DS/JM	Downgradient Proximal (Seasonal)	Clean	Team 1	Yes	<Null>	459.64	-1.37
KAFB-106224	<Null>	462.06	1/21/2021 15:05	0	<Null>	460.73	Clean - WH0012 - 253053 - Solinst 500 ft	0		TWV	459.64	Downgradient Proximal (Seasonal)	Clean	Team 1	Yes	<Null>	460.73	-1.33
KAFB-106225	<Null>	453.25	1/21/2021 15:12	0	<Null>	452.26	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	459.64	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	452.26	-0.99
KAFB-106226	<Null>	453.83	1/21/2021 15:23	0	<Null>	452.82	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	459.64	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	452.82	-1.01
KAFB-106227	<Null>	454.53	1/21/2021 15:29	0	<Null>	453.52	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	459.64	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	453.52	-1.01
KAFB-106229	<Null>	440.89	1/21/2021 15:26	0	<Null>	439.27	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater well paired with KAFB-106233 extraction well	Clean	Team 2	Yes	<Null>	439.41	-1.48
KAFB-106230	<Null>	451.00	1/21/2021 15:46	0	<Null>	450.13	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	450.13	-0.87
KAFB-106231	<Null>	454.19	1/19/2021 18:33	0	<Null>	453.05	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 1	Yes	<Null>	453.19	-1
KAFB-106232	<Null>	453.73	1/19/2021 18:23	0	<Null>	452.54	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 1	Yes	<Null>	452.68	-1.05
KAFB-106235-438	<Null>	441.54	1/18/2021 16:42	0	<Null>	440.74	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.88	-0.66
KAFB-106235-472	<Null>	441.52	1/18/2021 16:48	0	<Null>	440.72	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.86	-0.66
KAFB-106235-501	<Null>	441.60	1/18/2021 16:52	0	<Null>	440.77	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.91	-0.69
KAFB-106236-436	<Null>	441.73	1/18/2021 16:21	0	<Null>	440.86	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	440.86	441	-0.73
KAFB-106236-470	<Null>	441.73	1/18/2021 16:26	0	<Null>	440.80	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.94	-0.79
KAFB-106236-499	<Null>	441.77	1/18/2021 16:29	0	<Null>	440.85	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Former Downgradient Proximal; Current Upgradient Well	Clean	Team 2	Yes	<Null>	440.99	-0.78
KAFB-106240-449	<Null>	471.62	1/18/2021 20:01	0	<Null>	470.98	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	471.12	-0.5
KAFB-106241-428	<Null>	450.65	1/21/2021 16:36	0	<Null>	449.89	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	449.89	-0.76
KAFB-106242-418	<Null>	440.99	1/19/2021 17:29	0	<Null>	440.58	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	Barricades by SWSS	TWV	DS/GB	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	440.72	-0.27
KAFB-106243-425	<Null>	445.95	1/20/2021 17:31	0	<Null>	445.52	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	Groundwater Monitoring	Clean	Team 2	Yes	<Null>	445.66	-0.29
KAFB-106244-445	<Null>	467.08	1/18/2021 20:30	0	<Null>	466.45	Clean - WH0567 - 350333 - Solinst 750 ft	-0.14	<Null>	TWV	AR	VA Proximal	Clean	Team 2	Yes	<Null>	466.59	-0.49
KAFB-106245-460	<Null>	485.78	1/20/2021 16:37	0	<Null>	485.52	Clean - WH0012 - 253053 - Solinst 500 ft	0		TOPC	DS/JM	KAFB-016 Sentinel	Clean	Team 1	Yes	<Null>	485.52	-0.26
KAFB-106247-450	<Null>	475.51	1/18/2021 18:11	2.1	<Null>	474.90	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Downgradient Proximal (Seasonal)	Clean	Team 1	Yes	474.9	474.9	-0.61

Table C-2-3
Raw Well Gauging Data

Well Location ID	Previous Quarter: Depth to NAPL (ft MRP)	Previous Quarter: DTW (ft MRP)	Date/Time	PID (ppm)	Depth to NAPL (ft MRP)	DTW (ft MRP)	WL Meter Used (Serial No.)	Correction factor	Contact	Reference Point	Signature	Well Designation	Hazardous Code	Team	In Network	Notes	Corrected DTW	Change
KAFB-106S1-447	<Null>	468.89	1/18/2021 20:31	4.9	<Null>	468.32	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	468.32	-0.57
KAFB-106S2-451	<Null>	476.39	1/18/2021 17:15	1.3	<Null>	475.84	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	475.84	-0.55
KAFB-106S3-449	<Null>	475.56	1/20/2021 16:07	0.2	<Null>	475.38	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	475.38	-0.18
KAFB-106S4-446	<Null>	470.45	1/20/2021 15:22	0	<Null>	470.24	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Clean	Team 1	Yes	<Null>	470.24	-0.21
KAFB-106S5-446	<Null>	467.90	1/20/2021 18:24	0	<Null>	467.65	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	467.65	-0.25
KAFB-106S7-451	<Null>	473.29	1/20/2021 17:35	0	<Null>	472.96	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TWV	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	472.96	-0.33
KAFB-106S8-451	<Null>	475.30	1/18/2021 18:43	4.6	<Null>	474.74	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	474.74	-0.56
KAFB-106S9-447	<Null>	469.94	1/18/2021 16:51	0.3	<Null>	469.48	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	469.48	-0.46
KAFB-106S10-443	<Null>	<Null>	1/15/2021 08:30	0	<Null>	472.14	Hazardous - WH0571 - 253056 - Solinst 500 ft	0	<Null>	TOPC	DS/JM	Source Area	Hazardous	Team 1	Yes	<Null>	472.14	N/A
KAFB-3411	<Null>	467.02	1/18/2021 16:03	0	<Null>	466.44	Clean - WH0012 - 253053 - Solinst 500 ft	0	<Null>	TOPC	DS	Groundwater Monitoring	Clean	Team 1	Yes	<Null>	466.44	-0.58

<Null> = no data entered in the electronic gauging form
DTW = depth to water
ft = feet
MRP = measuring reference point
NAPL = non-aqueous phase liquid
No. = number
PID = photoionization detector
ppm = parts per million
WL = water level

Appendix C-3

Groundwater Purge Logs and Sample

Collection Logs

(January-March 2021)

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106003

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/14/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/03/2020 **(previous gauging date)**

Barricade/Notification:

Measurement Reference Point (MRP): TOPC

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 506.00 ft MRP

Top of Screen: 479 ft MRP

Bottom of Screen: 504 ft MRP

Reference Elevation Interval: 5340.276

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/3/2020

Previous Depth to water: 463.1 ft MRP Depth to Water (DTW): 462.88 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 481.00 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW003-211 Sampling Method: Low-flow

Duplicate ID (if applicable): Sampling Medium: Water

COC#: COC-003-211

Reviewed By: Initials: Review Date:

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106003

Purge Information and Field Parameter

Date: 01/14/2021

Purge Start Time: 10:10 Purge Rate: 740 mL/min X 0.265 = 0.196 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 15.90 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**463.1**	**1.49**	**17.9**		**8.52**	**983**	**7.8**	**412**
10:15	462.87	4.54	15.6	99.99	11.41	918	7.93	336.3
10:21	462.87	1.13	16.9	98.8	9.41	956	7.76	335.7
10:25	462.87	0.70	17.1	97.1	9.10	911	7.74	335.2
10:30	462.86	0.59	17.2	98.7	9.49	970	7.74	335.8

Sample Time: 10:38 Sample Date: 01/14/2021

Purge End Time: 10:39

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: DS Sampler Signature: D.Schmeelk Thursday, January 14, 2021 10:40 AM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	10.7	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: Review Date:

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project:	**Kirtland AFB BFF ST-106/SS-111**	**Well ID:**	**KAFB-106004**
Project No:	**6360401**	**Samplers:**	**D.Schmeelk, J.Messenger**
Date:	**01/13/2021**		

Well Information

Well was	Clean	Well Depth:	512.74 ft MRP
SCREEN SUBMERGED on	**11/04/2020** **(previous gauging date)**	Top of Screen:	486.74 ft MRP
Barricade/Notification:	Barricades by EA - VA lot	Bottom of Screen:	511.74 ft MRP
Measurement Reference Point (MRP):	TOPC	Reference Elevation Interval:	5345.806
IDW will be taken to:	GWTS/Pending Disposal Area	IDW Label:	Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: _____ ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 469.38 ft MRP Depth to Water (DTW): 469.03 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 488.74 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW004-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):		Sampling Medium:	Water
COC#:	COC-004-211		

Reviewed By: _____ Initials: _____ Review Date: _____

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106004

Purge Information and Field Parameter

Date: 01/13/2021

Purge Start Time: 08:18 Purge Rate: 800 mL/min X 0.265 = 0.212 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 17.36 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**469.38**	**0.59**	**19.7**		**5.83**	**484.1**	**7.73**	**332.1**
08:25	469.01	0.38	14.7	79.2	7.65	423.7	7.48	428.1
08:30	469.01	1.07	15.9	59.5	5.85	427.1	7.60	416.3
08:35	469.00	0.69	16.4	57.5	5.66	426.7	7.66	409.4
08:40	469.00	0.25	16.4	55.7	5.42	426.5	7.62	403.7
08:45	469.00	0.53	16.6	56.4	5.51	426.7	7.67	399.5

Sample Time: 08:50 Sample Date: 01/13/2021

Purge End Time: 08:51

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: D.Schmeelk Sampler Signature:



IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	12.0	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: Review Date:

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106005

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/15/2021

Well Information

Well was	Hazardous	Well Depth:	508.87 ft MRP
SCREEN SUBMERGED on	**11/03/2020 (previous gauging date)**	Top of Screen:	481.87 ft MRP
Barricade/Notification:		Bottom of Screen:	506.87 ft MRP
Measurement Reference Point (MRP):	TOPC	Reference Elevation Interval:	5346.909
IDW will be taken to:	90-Day Hazardous Waste Storage Yard	IDW Label:	Orange Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.7 ppm

LNAPL Present? Yes LNAPL Thickness: 0.04 ft LNAPL observed during last gauging event: 11/3/2020

Previous Depth to water: 470.72 ft MRP Depth to Water (DTW): 470.38 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-902

Non-Dedicated Pump Depth 483.87 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Hazardous - Solinst 500 ft - 253056 WH0571
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW005-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):		Sampling Medium:	Water
COC#:	COC-005-211		

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106005

Purge Information and Field Parameter

Date: 01/15/2021

Purge Start Time: 12:35 Purge Rate: 600 mL/min X 0.265 = 0.159 gal/min

Description of first water purged: Clear with voc odor

Drawdown Limit: 11.15 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**470.72**	**9.16**	**20.10**		**0.11**	**1172.00**	**7.37**	**-324.80**
12:45	470.38	13.5	16.3	77.5	7.25	1332	7.51	74.5
12:50	470.38	7.38	16.7	13.1	1.23	1614	7.26	-152.1
12:55	470.37	5.8	16.9	5.0	0.46	1609	7.25	-191.3
13:00	470.37	6.46	17.2	3.8	0.35	1609	7.25	-213.2
13:05	470.38	10.6	17.3	2.7	0.24	1606	7.24	-233.9
13:10	470.37	8.98	17.7	2.4	0.22	1605	7.20	-240.6
13:15	470.36	7.99	17.5	2.3	0.22	1604	7.23	-251.7
13:20	470.36	6.72	17.5	2.3	0.22	1602	7.24	-261.8

Sample Time: 13:25 Sample Date: 01/15/2021

Purge End Time: 13:34

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: D.Schmeelk Sampler Signature: D.Schmeelk Friday, January 15, 2021 14:24 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	16.4	90-Day Hazardous Waste Storage Yard	Orange Hazardous

Comments:

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project:	**Kirtland AFB BFF ST-106/SS-111**	**Well ID:**	**KAFB-106009**
Project No:	**6360401**	**Samplers:**	**D.Schmeelk, J.Messenger**
Date:	**01/11/2021**		

Well Information

Well was	Clean	Well Depth:	511.19 ft MRP
SCREEN SUBMERGED on	**11/03/2020 (previous gauging date)**	Top of Screen:	483.69 ft MRP
Barricade/Notification:		Bottom of Screen:	508.69 ft MRP
Measurement Reference Point (MRP):	TOPC	Reference Elevation Interval:	5348.545
IDW will be taken to:	GWTS/Pending Disposal Area	IDW Label:	Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL observed during last gauging event: 11/3/2020

Previous Depth to water: 472.37 ft MRP Depth to Water (DTW): 472.22 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 485.69 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 500 ft - 253053 WH0012
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW009-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):	GW009-611	Sampling Medium:	Water
COC#:	COC-009-211		

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106009

Purge Information and Field Parameter

Date: 01/11/2021

Purge Start Time: 14:12 Purge Rate: 760 mL/min X 0.265 = 0.201 gal/min

Description of first water purged: Clear & light VOC odor

Drawdown Limit: 11.32 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	**if > 10, ±10%**	**±10%**	-------	**±10%**	**±10%**	**±0.5**	-------
Historical Data:	**472.37**	**1.04**	**3.20**		**0.28**	**1774.00**	**6.89**	**156.50**
14:15	472.24	1.5	16.9	27.3	2.63	1017	7.01	110.5
14:20	472.24	1.21	17.1	8.0	0.76	1354	6.99	65.5
14:25	472.24	1.26	17.1	5.8	0.54	1350	6.99	47.8
14:30	472.24	1.10	17.3	4.8	0.45	1344	6.98	34.4
14:35	472.24	0.97	17.2	4.4	0.41	1344	6.97	28.9
14:40	472.24	0.81	17.3	3.9	0.37	1343	6.97	19.9
14:45	472.24	0.91	17.3	3.5	0.34	1340	6.96	11.9
14:50	472.24	1.98	17.3	3.5	0.33	1342	6.96	6.9698
14:55	472.24	1.84	17.3	3.2	0.32	1343	6.94	4.7

Sample Time: 15:05 Sample Date: 01/11/2021

Purge End Time: 15:07

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: DS Sampler Signature: DS Monday, January 11, 2021 16:26 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	16.1	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments: Sampled using new dedicated tubing

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project:	**Kirtland AFB BFF ST-106/SS-111**	**Well ID:**	**KAFB-106012R**
Project No:	**6360401**	**Samplers:**	**D.Schmeelk, J.Messenger**
Date:	**01/11/2021**		

Well Information

Well was	Clean	Well Depth:	502.91 ft MRP
SCREEN SUBMERGED on	**11/03/2020 (previous gauging date)**	Top of Screen:	468.47 ft MRP
Barricade/Notification:		Bottom of Screen:	497.74 ft MRP
Measurement Reference Point (MRP):	TOPC	Reference Elevation Interval:	5344.998
IDW will be taken to:	GWTS/Pending Disposal Area	IDW Label:	Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: _____ ft LNAPL Not observed during last gauging event: 11/3/2020

Previous Depth to water: 468.77 ft MRP Depth to Water (DTW): 468.68 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 495.74 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 500 ft - 253053 WH0012
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW012R-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):		Sampling Medium:	Water
COC#:	COC-012R-211		

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106012R

Purge Information and Field Parameter

Date: 01/11/2021

Purge Start Time: 11:58 Purge Rate: 680 mL/min X 0.265 = 0.180 gal/min

Description of first water purged: Clear & odorless

Drawdown Limit: 7.24 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**468.77**	**0.97**	**21.3**		**7.44**	**1610**	**7.27**	**195.8**
12:05	468.68	1.28	14.6	71.2	7.20	1563	7.42	425.1
12:10	468.67	1.69	14.9	70.9	7.12	1526	7.41	415.7
12:15	468.67	2.30	15.3	71.3	7.17	1517	7.39	409.7
12:21	468.67	2.20	15.8	71.8	7.08	1533	7.39	403.4

Sample Time: 12:25 Sample Date: 01/11/2021

Purge End Time: 12:36

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: DS Sampler Signature: DS Monday, January 11, 2021 13:23 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	19.3	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments: Sampled using new dedicated tubing

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project:	**Kirtland AFB BFF ST-106/SS-111**	**Well ID:**	**KAFB-106013**
Project No:	**6360401**	**Samplers:**	**D.Schmeelk, J.Messenger**
Date:	**01/12/2021**		

Well Information

Well was	Clean	Well Depth:	519.65 ft MRP
SCREEN SUBMERGED on	**11/04/2020 (previous gauging date)**	Top of Screen:	489.65 ft MRP
Barricade/Notification:	Call VA Police - Michael Vorhe 609-7450 or 265-1711 ext:4211	Bottom of Screen:	514.65 ft MRP
Measurement Reference Point (MRP):	TOPC	Reference Elevation Interval:	5350.619
IDW will be taken to:	GWTS/Pending Disposal Area	IDW Label:	Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: _____ ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 474.79 ft MRP Depth to Water (DTW): 474.46 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 491.65 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW013-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):		Sampling Medium:	Water
COC#:	COC-013-211		

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106013

Purge Information and Field Parameter

Date: 01/12/2021

Purge Start Time: 08:58 Purge Rate: 800 mL/min X 0.265 = 0.212 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 14.86 ft (based on previous water level)

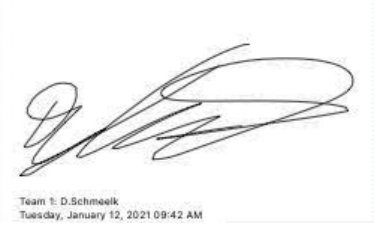
Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**474.79**	**5.08**	**19**		**2.55**	**496.7**	**7.7**	**439.6**
09:00	474.43	0.84	11.4	98.7	10.3	487.0	7.77	443.1
09:05	474.42	21.0	13.6	41.2	4.01	502.9	7.79	423.4
09:10	474.42	27.0	15.1	21.5	2.13	508.9	7.80	414.2
09:15	474.42	16.8	15.2	18.0	1.78	510.4	7.79	407.7
09:20	474.42	13.9	15.7	16.5	1.63	510.5	7.75	400.4
09:25	474.41	10.3	15.5	15.5	1.54	509.6	7.75	394.8
09:30	474.41	9.19	15.6	15.2	1.49	509.8	7.73	389.4
09:35	474.41	9.26	16.0	14.7	1.45	510.2	7.73	382.6

Sample Time: 09:40 Sample Date: 01/12/2021

Purge End Time: 09:41

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: DS Sampler Signature:



IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	14.1	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106029 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW029-211

Well Information				
Screen Interval Length (ft):	**20**		Well Depth:	475.80 ft MRP
Previous Depth to Water (MRP):		**(Gauged on 01/01/1900)**	Top of Screen:	451.00 ft MRP
Length of Screen not submerged (ft):			Bottom of Screen:	471.00 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 12:23

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 435.43

DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	1	451.70
✓	2	454.30
	3	456.90
	4	459.50
	5	462.10
	6	464.70
	7	467.30

Depths highlighted gray represent submerged samplers based on previous water level

Team 1: D.Schmeelk
Tuesday, December 15, 2020 12:25 PM

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106029 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW029-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW029-211
Duplicate ID:
COC#: COC-029-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106030 ***Deployment***
Quarter: 1
Sample ID: GW030-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	489.90 ft MRP
Previous Depth to Water (MRP):	**435.93**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	469.34 ft MRP
Length of Screen not submerged (ft):	**-33.41001**			Bottom of Screen:	484.34 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 12:12

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	470.04
✓	2	472.64
	3	475.24
	4	477.84
	5	480.44

Depths highlighted gray represent submerged samplers based on previous water level

Team 1: D.Schmeelk
Tuesday, December 15, 2020 12:12 PM

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106030 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW030-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW030-211
Duplicate ID:
COC#: COC-030-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106031 ***Deployment***
Quarter: 1
Sample ID: GW031-211

Well Information					
Screen Interval Length (ft):	**14**			Well Depth:	514.90 ft MRP
Previous Depth to Water (MRP):	**436.07**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	495.18 ft MRP
Length of Screen not submerged (ft):	**-59.11**			Bottom of Screen:	509.18 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 12:03

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	495.88
✓	2	498.48
	3	501.08
	4	503.68
	5	506.28

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106031 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW031-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW031-211
Duplicate ID:
COC#: COC-031-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106032 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW032-211

Well Information					
Screen Interval Length (ft):	**20**			Well Depth:	480.50 ft MRP
Previous Depth to Water (MRP):	**441.47**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	456.00 ft MRP
Length of Screen not submerged (ft):	**-14.53**			Bottom of Screen:	476.00 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 12:49

PID: MiniRAE 3000 - 592-915790 WH0004

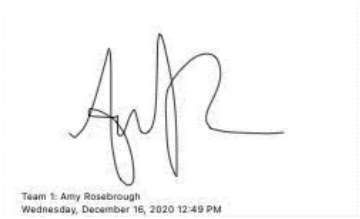
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	1	456.70
✓	2	459.30
	3	461.90
	4	464.50
	5	467.10
	6	469.70
	7	472.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106032 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW032-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:40 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW032-211
Duplicate ID:
COC#: COC-032-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106033 ***Deployment***
Quarter: 1
Sample ID: GW033-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	496.60 ft MRP
Previous Depth to Water (MRP):	**441.61**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	476.55 ft MRP
Length of Screen not submerged (ft):	**-34.94001**			Bottom of Screen:	491.55 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 12:58

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	**1**	**477.25**
✓	**2**	**479.85**
	3	**482.45**
	4	**485.05**
	5	**487.65**

✓ **Indicates sampler deployment position**
Dotted line indicates current water level
Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106033 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW033-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW033-211
Duplicate ID:
COC#: COC-033-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106034 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW034-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	522.00 ft MRP
Previous Depth to Water (MRP):	**442.47**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	501.42 ft MRP
Length of Screen not submerged (ft):	**-58.95001**			Bottom of Screen:	516.42 ft MRP

Deployment Team: Team

Date Deployed: 12/16/2020 **Time Deployed:** 13:17

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	**1**	**502.12**
✓	**2**	**504.72**
	3	**507.32**
	4	**509.92**
	5	**512.52**

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106034 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW034-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:27 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW034-211
Duplicate ID:
COC#: COC-034-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106041 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW041-211

Well Information				Well Depth:	473.80	ft MRP
Screen Interval Length (ft):	**20**			Top of Screen:	449.00	ft MRP
Previous Depth to Water (MRP):	**450.19**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	469.00	ft MRP
Length of Screen not submerged (ft):	**1.19**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 12:30

PID: MiniRAE 3000 - 592-915790 WH0004

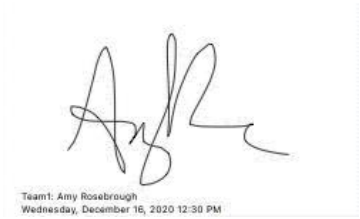
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 449.69

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	449.70
✓	2	452.30
✓	3	454.90
	4	457.50
	5	460.10
	6	462.70
	7	465.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106041 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW041-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:12 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)	✓	✓						
Alkalinity		✓						
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW041-211
Duplicate ID:
COC#: COC-041-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106049 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW049-211

Well Information

Screen Interval Length (ft):	**20**			Well Depth:	480.70 ft MRP
Previous Depth to Water (MRP):	**441.08**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	457.00 ft MRP
Length of Screen not submerged (ft):	**-15.92**			Bottom of Screen:	477.00 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 11:10

PID: MiniRAE 3000 - 592-915790 WH0004

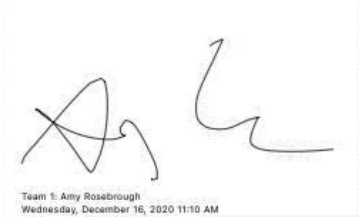
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	457.70
✓	2	460.30
	3	462.90
	4	465.50
	5	468.10
	6	470.70
	7	473.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106049 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW049-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:10 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW049-211
Duplicate ID:
COC#: COC-049-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106149-484 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW149-484-211

Well Information					
Screen Interval Length (ft):	**130**			Well Depth:	483.84 ft MRP
Previous Depth to Water (MRP):	**469.89**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	354.00 ft MRP
Length of Screen not submerged (ft):	**115.89**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	484.00 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 13:15

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Hazardous - Solinst 500 ft - 253056 WH0571

PID Reading: 73.6 **ppm**

Depth to Water: 469.67

DMS Tether and Reel ID match Well ID? DS

Notes: Used engineering controls to limit exposure to fumes



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	10	453.80
	11	456.40
	12	459.00
	13	461.60
	14	464.20
	15	466.80
	16	469.40
✓	17	472.00
✓	18	474.60
✓	19	477.20
	20	479.80

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: _____ **Reviewed Date:** _____

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106149-484 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW149-484-211

Date Sampled: 01/07/2021 **Time Sampled:** 13:40 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB		✓						
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)		✓						
Metals (Total)		✓	✓					
Alkalinity			✓					
Anions			✓					
Nitrate / Nitrite			✓					

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GW149-484-211
Duplicate ID:
COC#: COC-149-484-211

Reveiwed By: **Reviewed Date:**

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106050 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW050-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	494.80 ft MRP
Previous Depth to Water (MRP):	**440.49**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	473.21 ft MRP
Length of Screen not submerged (ft):	**-32.72001**			Bottom of Screen:	488.21 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 11:18

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	**1**	**473.91**
✓	**2**	**476.51**
	3	**479.11**
	4	**481.71**
	5	**484.31**

✓ **Indicates sampler deployment position**

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106050 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW050-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW050-211
Duplicate ID:
COC#: COC-050-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106051 ***Deployment***
Quarter: 1
Sample ID: GW051-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	521.20 ft MRP
Previous Depth to Water (MRP):	**440.78**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	500.38 ft MRP
Length of Screen not submerged (ft):	**-59.60001**			Bottom of Screen:	515.38 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 11:34

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:

Team 1: Amy Rosebrough
Wednesday, December 16, 2020 11:34 AM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	501.08
✓	2	503.68
	3	506.28
	4	508.88
	5	511.48

✓ Indicates sampler deployment position
Dotted line indicates current water level
Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106051 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW051-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:28 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW051-211
Duplicate ID:
COC#: COC-051-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106151-484 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW151-484-211

Well Information				Well Depth:	484.19	ft MRP
Screen Interval Length (ft):	**129**			Top of Screen:	355.19	ft MRP
Previous Depth to Water (MRP):	**469.78**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	484.19	ft MRP
Length of Screen not submerged (ft):	**114.59**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 14:34

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Hazardous - Solinst 500 ft - 253056 WH0571

PID Reading: 4.6 **ppm**

Depth to Water: 469.58

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	10	453.99
	11	456.59
	12	459.19
	13	461.79
	14	464.39
	15	466.99
✓	16	469.59
✓	17	472.19
✓	18	474.79
	19	477.39
	20	479.99

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106151-484 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW151-484-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB		✓						
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)		✓						
Metals (Total)		✓	✓					
Alkalinity			✓					
Anions			✓					
Nitrate / Nitrite			✓					

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes: 1st bottle not fully submerged, sampled from bottles 2 and 3 only. DTW: 469.56 ft.

Sample ID: GW151-484-211
Duplicate ID:
COC#: COC-151-484-211

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106152-484 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW152-484-211

Well Information				Well Depth:	484.28	ft MRP
Screen Interval Length (ft):	**129**			Top of Screen:	355.28	ft MRP
Previous Depth to Water (MRP):	**471.63**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	484.28	ft MRP
Length of Screen not submerged (ft):	**116.35**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 13:50

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Hazardous - Solinst 500 ft - 253056 WH0571

PID Reading: 15.5 **ppm**

Depth to Water: 471.41

DMS Tether and Reel ID match Well ID? DS

Notes: Used engineering controls to limit exposure to fumes

D.S.
Wednesday, February 17, 2021 16:28 PM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	10	454.08
	11	456.68
	12	459.28
	13	461.88
	14	464.48
	15	467.08
	16	469.68
✓	17	472.28
✓	18	474.88
✓	19	477.48
	20	480.08

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106152-484 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW152-484-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB		✓						
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)		✓						
Metals (Total)		✓	✓					
Alkalinity		✓	✓					
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes: Top bag not completely submerged. Got full sample from bags 1 and 2. Current DTW is 471.42, using Solinst 253056.

Sample ID: GW152-484-211
Duplicate ID:
COC#: COC-152-484-211

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106153-484 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW153-484-211

Well Information				Well Depth:	484.29	ft MRP
Screen Interval Length (ft):	**129**			Top of Screen:	355.29	ft MRP
Previous Depth to Water (MRP):	**473.01**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	484.29	ft MRP
Length of Screen not submerged (ft):	**117.72**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 11:41

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Hazardous - Solinst 500 ft - 253056 WH0571

PID Reading: 0.0 **ppm**

Depth to Water: 472.85

DMS Tether and Reel ID match Well ID? DS

Notes:

DS
Wednesday, February 17, 2021 16:31 PM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	10	454.09
	11	456.69
	12	459.29
	13	461.89
	14	464.49
	15	467.09
	16	469.69
	17	472.29
✓	18	474.89
✓	19	477.49
✓	20	480.09

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106153-484 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW153-484-211

Date Sampled: 01/04/2021 **Time Sampled:** 13:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB		✓						
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)		✓						
Metals (Total)		✓	✓					
Alkalinity			✓					
Anions			✓					
Nitrate / Nitrite			✓					

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Sample ID: GW153-484-211

First bottle not completely submerged. Sampled starting at bottle 2.

Notes:

Duplicate ID:

COC#: COC-153-484-211

Reveiwed By: Amanda M. Smith

Reviewed Date: 4/01/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106097

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/12/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/04/2020 **(previous gauging date)**

Barricade/Notification: Call VA Police - Michael Vorhe 609-7450 or 265-1711 ext:4211

Measurement Reference Point (MRP): TWV

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 526.04 ft MRP

Top of Screen: 506.04 ft MRP

Bottom of Screen: 521.04 ft MRP

Reference Elevation Interval: 5347.741

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 471.71 ft MRP Depth to Water (DTW): 471.27 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 508.04 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW097-211 Sampling Method: Low-flow

Duplicate ID (if applicable): Sampling Medium: Water

COC#: COC-097-211

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106097

Purge Information and Field Parameter

Date: 01/12/2021

Purge Start Time: 13:39 Purge Rate: 640 mL/min X 0.265 = 0.170 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 34.33 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**471.71**	**0.92**	**19.7**		**2.76**	**442.5**	**7.8**	**419**
13:45	471.26	0.85	16.2	74.0	6.68	455.2	7.89	306.0
13:50	471.26	0.46	16.9	34.5	3.28	475.2	7.84	299.1
13:55	471.25	2.33	17.3	29.4	2.81	476.3	7.81	294.1
14:00	471.25	0.22	17.4	28.2	2.71	479.6	7.80	290.7
14:05	471.25	0.48	17.5	28.1	2.69	483.5	7.79	287.2

Sample Time: 14:10 Sample Date: 01/12/2021

Purge End Time: 14:12

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: DS Sampler Signature: D.Schmeelk Wednesday, January 13, 2021 16:39 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	10.6	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project:	**Kirtland AFB BFF ST-106/SS-111**	**Well ID:**	**KAFB-106098**
Project No:	**6360401**	**Samplers:**	**D.Schmeelk, J.Messenger**
Date:	**01/12/2021**		

Well Information

Well was	Clean	Well Depth:	551.12 ft MRP
SCREEN SUBMERGED on	**11/04/2020 (previous gauging date)**	Top of Screen:	531.02 ft MRP
Barricade/Notification:	Call VA Police - Michael Vorhe 609-7450 or 265-1711 ext:4211	Bottom of Screen:	546.02 ft MRP
Measurement Reference Point (MRP):	TWV	Reference Elevation Interval:	5347.825
IDW will be taken to:	GWTS/Pending Disposal Area	IDW Label:	Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: _____ ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 471.84 ft MRP Depth to Water (DTW): 471.45 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 532.02 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID:	GW098-211	Sampling Method:	Low-flow
Duplicate ID (if applicable):		Sampling Medium:	Water
COC#:	COC-098-211		

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106098

Purge Information and Field Parameter

Date: 01/12/2021

Purge Start Time: 11:53 Purge Rate: 700 mL/min X 0.265 = 0.186 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 59.18 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	**if > 10, ±10%**	**±10%**	-------	**±10%**	**±10%**	**±0.5**	-------
Historical Data:	**471.84**	**0.62**	**19.3**		**2.92**	**490.2**	**7.83**	**441.9**
12:00	471.43	1.72	15.3	76.1	7.31	454.6	7.79	288.8
12:05	471.43	0.48	17.2	42.2	4.02	475.2	7.76	282.0
12:10	471.42	0.40	17.1	35.9	3.45	475.2	7.76	280.0
12:15	471.41	1.37	17.3	31.9	3.05	476.2	7.76	278.0
12:20	471.41	0.24	17.3	31.4	2.98	476.2	7.76	277.0
12:25	471.42	0.53	17.6	31.1	2.99	475.4	7.76	276.0

Sample Time: 12:30 Sample Date: 01/12/2021

Purge End Time: 12:31

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: Dylan Schmeelk Sampler Signature: D.Schmeelk Wednesday, January 13, 2021 16:40 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	12.0	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: amanda m smith Initials: AMS Review Date: 5/5/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106099

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/13/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/04/2020 **(previous gauging date)**

Barricade/Notification: Barricades by EA - VA lot

Measurement Reference Point (MRP): TWV

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 521.00 ft MRP

Top of Screen: 501 ft MRP

Bottom of Screen: 516 ft MRP

Reference Elevation Interval: 5342.854

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 466.33 ft MRP Depth to Water (DTW): 465.80 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 503.00 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW099-211 Sampling Method: Low-flow

Duplicate ID (if applicable): Sampling Medium: Water

COC#: COC-099-211

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106099

Purge Information and Field Parameter

Date: 01/13/2021

Purge Start Time: 12:06 Purge Rate: 920 mL/min X 0.265 = 0.244 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 34.67 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**466.33**	**0.49**	**18.5**		**4.6**	**442.8**	**7.83**	**403.8**
12:10	465.79	1.26	16.1	92.7	9.96	413.8	7.80	304.4
12:15	465.78	2.15	17.5	61.6	5.82	434.0	7.80	294.7
12:20	465.78	1.95	18.0	58.3	5.52	434.5	7.80	289.7
12:25	465.78	7.18	18.0	57.4	5.46	434.3	7.82	287.1

Sample Time: 12:30 Sample Date: 01/13/2021

Purge End Time: 12:31

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: Dylan Schmeelk Sampler Signature:



IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	11.1	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106100

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/13/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/04/2020 **(previous gauging date)**

Barricade/Notification: Barricades by EA - VA lot

Measurement Reference Point (MRP): TWV

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 546.00 ft MRP

Top of Screen: 526 ft MRP

Bottom of Screen: 541 ft MRP

Reference Elevation Interval: 5342.852

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/4/2020

Previous Depth to water: 466.38 ft MRP Depth to Water (DTW): 465.92 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 528.00 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW100-211 Sampling Method: Low-flow

Duplicate ID (if applicable): Sampling Medium: Water

COC#: COC-100-211

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106100

Purge Information and Field Parameter

Date: 01/13/2021

Purge Start Time: 10:17 Purge Rate: 780 mL/min X 0.265 = 0.207 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 59.62 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**466.38**	**6.26**	**20.7**		**3.69**	**369.6**	**7.81**	**310.1**
10:25	465.91	3.57	16.3	45.1	4.21	339.2	7.92	321.5
10:30	465.90	1.28	16.9	29.8	2.86	347.6	7.88	314.7
10:35	465.89	1.36	17.3	27.2	2.60	348.3	7.88	309.5
10:40	465.89	0.95	17.4	26.1	2.50	347.9	7.83	303.5
10:46	465.88	0.96	17.4	25.3	2.42	347.9	7.83	301.0
10:50	465.88	1.79	17.6	25.0	2.40	348.0	7.81	298.3

Sample Time: 10:55 Sample Date: 01/13/2021

Purge End Time: 10:56

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: Dylan Schmeelk Sampler Signature: D.Schmeelk Wednesday, January 13, 2021 10:57 AM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	13.1	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106101

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/13/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/03/2020 **(previous gauging date)**

Barricade/Notification:

Measurement Reference Point (MRP): TOPC

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 518.01 ft MRP

Top of Screen: 498.81 ft MRP

Bottom of Screen: 514.11 ft MRP

Reference Elevation Interval: 5340.32

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/3/2020

Previous Depth to water: 463.37 ft MRP Depth to Water (DTW): 463.00 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 500.81 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW101-211 Sampling Method: Low-flow

Duplicate ID (if applicable): GW101-611 Sampling Medium: Water

COC#: COC-101-211

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106101

Purge Information and Field Parameter

Date: 01/13/2021

Purge Start Time: 13:52 Purge Rate: 760 mL/min X 0.265 = 0.201 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 35.44 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**463.37**	**1.29**	**20.4**		**7.28**	**794**	**7.67**	**340.6**
13:55	463.00	3.17	16.3	99.99	10.32	803	7.87	292.1
14:01	463.00	2.73	17.1	95.5	9.13	911	7.67	294.6
14:05	463.00	1.18	17.4	94.9	9.05	915	7.69	293.1
14:10	463.00	1.59	17.5	91.2	8.69	916	7.68	292.9
14:15	463.00	1.17	17.8	94.8	8.87	930	7.69	294.8

Sample Time: 14:20 Sample Date: 01/13/2021

Purge End Time: 14:24

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: Dylan Schmeelk Sampler Signature: D.Schmeelk Wednesday, January 13, 2021 14:25 PM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	11.4	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106102

Project No: 6360401 **Samplers:** D.Schmeelk, J.Messenger

Date: 01/14/2021

Well Information

Well was: Clean

SCREEN SUBMERGED on 11/03/2020 **(previous gauging date)**

Barricade/Notification:

Measurement Reference Point (MRP): TOPC

IDW will be taken to: GWTS/Pending Disposal Area

Well Depth: 543.08 ft MRP

Top of Screen: 523.98 ft MRP

Bottom of Screen: 537.68 ft MRP

Reference Elevation Interval: 5340.323

IDW Label: Green Non-Hazardous

Protective Casing/Vault: Intact Well Locked/Security Bolt Present: Yes Well ID Marked: Yes

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present? No LNAPL Thickness: ft LNAPL Not observed during last gauging event: 11/3/2020

Previous Depth to water: 463.48 ft MRP Depth to Water (DTW): 463.18 ft MRP

Pump Information

Non-Dedicated Pump

Bennett Pump Serial No: 1807B-919

Non-Dedicated Pump Depth 525.98 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus - 18L100378 WH0003
PID	MiniRAE 3000 - 592-915579 WH0006
Water Level Meter	Clean - Solinst 750 ft - 350333 WH0567
Turbidity Meter	Hach 2100Q - 5100C045025 WH0007

Sample Information

Sample ID: GW102-211 Sampling Method: Low-flow

Duplicate ID (if applicable): Sampling Medium: Water

COC#: COC-102-211

Reviewed By: Initials: SL Review Date: 05/06/2021

Groundwater Purge and Sampling Log

Year: 2021

Quarter: 1

Project: Kirtland AFB BFF ST-106/SS-111 **Well ID:** KAFB-106102

Purge Information and Field Parameter

Date: 01/14/2021

Purge Start Time: 08:01 Purge Rate: 760 mL/min X 0.265 = 0.201 gal/min

Description of first water purged: Clear & Odorless

Drawdown Limit: 60.50 ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp (°C)	DO Saturated (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	if > 10, ±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:	**463.48**	**0.66**	**18.3**		**3.89**	**389**	**7.92**	**387.5**
08:10	463.18	13.4	15.3	53.7	5.22	350.1	7.56	353.8
08:15	463.18	0.63	16.6	38.9	3.77	356.0	7.68	347.6
08:20	463.18	0.51	16.9	35.5	3.43	356.3	7.71	344.5
08:25	463.19	0.38	16.9	33.6	3.21	356.2	7.71	343.6
08:30	463.19	0.37	17.2	32.7	3.17	356.6	7.72	341.8

Sample Time: 08:35 Sample Date: 01/14/2021

Purge End Time: 08:36

Bubbles in the vials?: No Where? Amount: Size:

Sampled by: D.Schmeelk Sampler Signature: D.Schmeelk Thursday, January 14, 2021 09:16 AM

IDW Management

	Estimated volume per IDW drum (gal)	IDW will be taken to:	IDW Label:
Total	12.0	GWTS/Pending Disposal Area	Green Non-Hazardous

Comments:

Reviewed By: Initials: SL Review Date: 05/06/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106201 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW201-211

Well Information					
Screen Interval Length (ft):	**30**			Well Depth:	524.65 ft MRP
Previous Depth to Water (MRP):	**488.10**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	489.65 ft MRP
Length of Screen not submerged (ft):	**-1.55**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	519.65 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/16/2020 **Time Deployed:** 09:20

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Clean - Solinst 750 ft - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 484.30

DMS Tether and Reel ID match Well ID? DS

Notes:

DS
Wednesday, February 17, 2021 17:01 PM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	1	490.35
✓	2	492.95
	3	495.55
	4	498.15
	5	500.75
	6	503.35
	7	505.95
	8	508.55
	9	511.15
	10	513.75

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106201 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW201-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:40 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW201-211
Duplicate ID:
COC#: COC-201-211

Reveiwed By: Amanda M. Smith **Reviewed Date:** 4/01/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106202 ***Deployment***
Quarter: 1
Sample ID: GW202-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	539.90 ft MRP
Previous Depth to Water (MRP):	**488.84**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	519.23 ft MRP
Length of Screen not submerged (ft):	**-30.389999**			Bottom of Screen:	534.23 ft MRP

Deployment Team: Team

Date Deployed: 12/16/2020 **Time Deployed:** 09:10

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	519.93
✓	2	522.53
	3	525.13
	4	527.73
	5	530.33

Depths highlighted gray represent submerged samplers based on previous water level

Team 1: Amy Rosebrough
Wednesday, December 16, 2020 09:10 AM

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106202 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW202-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:25 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW202-211
Duplicate ID:
COC#: COC-202-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Quarter: 1
Well Location ID: KAFB-106203 ***Deployment***
Sample ID: GW203-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	643.08 ft MRP
Previous Depth to Water (MRP):	**488.96**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	622.41 ft MRP
Length of Screen not submerged (ft):	**-133.449999**			Bottom of Screen:	637.41 ft MRP

Deployment Team: Team

Date Deployed: 12/16/2020 **Time Deployed:** 09:33

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:

Team 1: Amy Rosebrough
Wednesday, December 16, 2020 09:33 AM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	623.11
✓	2	625.71
	3	628.31
	4	630.91
	5	633.51

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106203 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW203-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW203-211
Duplicate ID:
COC#: COC-203-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Quarter: 1
Well Location ID: KAFB-106204 ***Deployment***
Sample ID: GW204-211

Well Information					
Screen Interval Length (ft):	**30**			Well Depth:	497.50 ft MRP
Previous Depth to Water (MRP):	**459.94**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	463.00 ft MRP
Length of Screen not submerged (ft):	**-3.06**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	493.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 11:43

PID: MiniRAE 3000 - 592-915790 WH0004

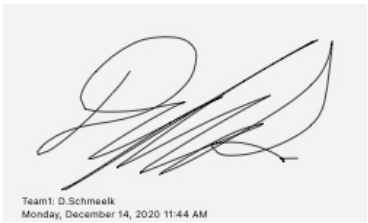
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 458.55

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	463.70
✓	2	466.30
	3	468.90
	4	471.50
	5	474.10
	6	476.70
	7	479.30
	8	481.90
	9	484.50
	10	487.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106204 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW204-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:50 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓						✓	
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes: Took duplicate here instead of KAFB-106205.

Sample ID: GW204-211
Duplicate ID: GW204-611
COC#: COC-204-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106205 ***Deployment***
Quarter: 1
Sample ID: GW205-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	512.50 ft MRP
Previous Depth to Water (MRP):	**460.39**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	492.38 ft MRP
Length of Screen not submerged (ft):	**-31.99001**			Bottom of Screen:	507.38 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 11:00

PID: MiniRAE 3000 - 592-915790 WH0004

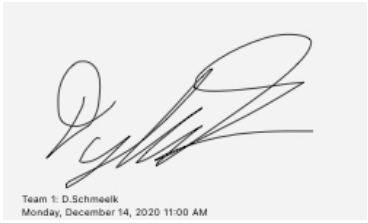
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	**1**	**493.08**
✓	**2**	**495.68**
	3	**498.28**
	4	**500.88**
	5	**503.48**

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106205 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW205-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:26 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes: Duplicate not taken. Will take on KAFB-106204 instead.

Sample ID: GW205-211
Duplicate ID: GW205-611
COC#: COC-205-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106206 ***Deployment***
Quarter: 1
Sample ID: GW206-211

Well Information					
Screen Interval Length (ft):	**14**			Well Depth:	613.20 ft MRP
Previous Depth to Water (MRP):	**460.55**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	593.13 ft MRP
Length of Screen not submerged (ft):	**-132.58001**			Bottom of Screen:	607.13 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 13:55

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	593.83
✓	2	596.43
	3	599.03
	4	601.63
	5	604.23

Depths highlighted gray represent submerged samplers based on previous water level

Team 1: D.Schmeelk
Tuesday, December 15, 2020 13:55 PM

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106206 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW206-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:25 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW206-211
Duplicate ID:
COC#: COC-206-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106207 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW207-211

Well Information				Well Depth:	508.00	ft MRP
Screen Interval Length (ft):	**30**			Top of Screen:	473.00	ft MRP
Previous Depth to Water (MRP):	**472.86**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	503.00	ft MRP
Length of Screen not submerged (ft):	**-0.14**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 09:57

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 470.75

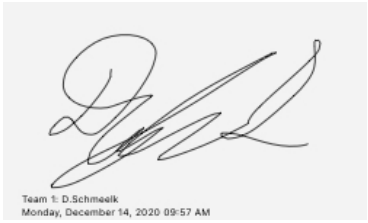
DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	473.70
✓	2	476.30
	3	478.90
	4	481.50
	5	484.10
	6	486.70
	7	489.30
	8	491.90
	9	494.50
	10	497.10

Depths highlighted gray represent submerged samplers based on previous water level



Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106207 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW207-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:27 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW207-211
Duplicate ID:
COC#: COC-207-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106208 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW208-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	523.00 ft MRP
Previous Depth to Water (MRP):	**472.56**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	502.40 ft MRP
Length of Screen not submerged (ft):	**-29.84**			Bottom of Screen:	517.40 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 10:12

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

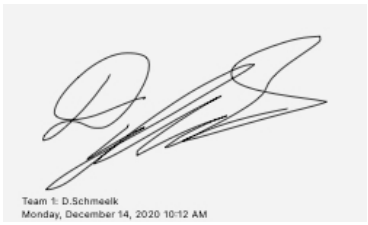
DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	503.10
✓	2	505.70
	3	508.30
	4	510.90
	5	513.50

Depths highlighted gray represent submerged samplers based on previous water level



Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106208 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW208-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:40 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW208-211
Duplicate ID:
COC#: COC-208-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106209 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW209-211

Well Information					
Screen Interval Length (ft):	**14**			Well Depth:	622.00 ft MRP
Previous Depth to Water (MRP):	**471.87**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	602.29 ft MRP
Length of Screen not submerged (ft):	**-130.42**			Bottom of Screen:	616.29 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 10:25

PID: MiniRAE 3000 - 592-915790 WH0004

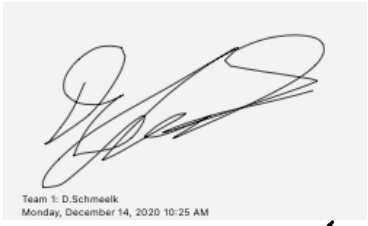
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	602.99
✓	2	605.59
	3	608.19
	4	610.79
	5	613.39

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106209 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW209-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:57 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW209-211
Duplicate ID:
COC#: COC-209-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106216 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW216-211

Well Information					
Screen Interval Length (ft):	**30**			Well Depth:	490.50 ft MRP
Previous Depth to Water (MRP):	**460.53**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	456.00 ft MRP
Length of Screen not submerged (ft):	**4.53**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	486.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 12:49

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 459.50

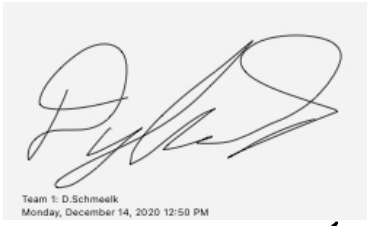
DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
	1	456.70
	2	459.30
✓	3	461.90
✓	4	464.50
	5	467.10
	6	469.70
	7	472.30
	8	474.90
	9	477.50
	10	480.10

Depths highlighted gray represent submerged samplers based on previous water level



Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106216 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW216-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:10 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW216-211
Duplicate ID:
COC#: COC-216-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106217 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW217-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	505.00 ft MRP
Previous Depth to Water (MRP):	**460.45**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	485.00 ft MRP
Length of Screen not submerged (ft):	**-24.55**			Bottom of Screen:	500.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 12:21

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	**Top of Sampler Depth (MRP)**
✓	**1**	**485.70**
✓	**2**	**488.30**
	3	**490.90**
	4	**493.50**
	5	**496.10**

Depths highlighted gray represent submerged samplers based on previous water level



Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106217 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW217-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:53 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW217-211
Duplicate ID:
COC#: COC-217-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106218 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW218-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	572.45 ft MRP
Previous Depth to Water (MRP):	**460.61**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	552.00 ft MRP
Length of Screen not submerged (ft):	**-91.39**			Bottom of Screen:	567.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 12:32

PID: MiniRAE 3000 - 592-915790 WH0004

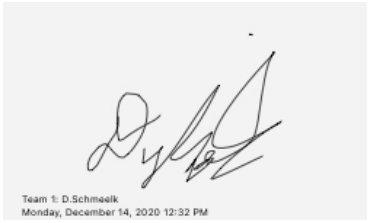
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	552.70
✓	2	555.30
	3	557.90
	4	560.50
	5	563.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106218 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW218-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:35 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** DS

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓						✓	
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes: Bubble in 2 VOAs, each <1mm

Sample ID: GW218-211
Duplicate ID: GW218-611
COC#: COC-218-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106222 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW222-211

Well Information					
Screen Interval Length (ft):	**30**			Well Depth:	493.20 ft MRP
Previous Depth to Water (MRP):	**460.38**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	458.00 ft MRP
Length of Screen not submerged (ft):	**2.38**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	488.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 13:45

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 459.03

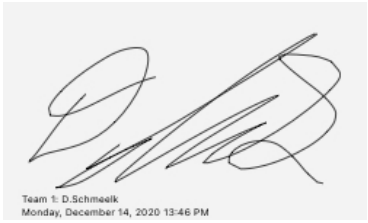
DMS Tether and Reel ID match Well ID? DS

Notes:

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
	1	458.70
✓	2	461.30
✓	3	463.90
	4	466.50
	5	469.10
	6	471.70
	7	474.30
	8	476.90
	9	479.50
	10	482.10

Depths highlighted gray represent submerged samplers based on previous water level



Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106222 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW222-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:05 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW222-211
Duplicate ID:
COC#: COC-222-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106223 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW223-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	508.00 ft MRP
Previous Depth to Water (MRP):	**461.01**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	488.00 ft MRP
Length of Screen not submerged (ft):	**-26.99**			Bottom of Screen:	503.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 13:25

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:

Team 1: D.Schmeelk
Monday, December 14, 2020 13:28 PM

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	488.70
✓	2	491.30
	3	493.90
	4	496.50
	5	499.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106223 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW223-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:46 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW223-211
Duplicate ID:
COC#: COC-223-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106224 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW224-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	575.50 ft MRP
Previous Depth to Water (MRP):	**462.06**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	555.00 ft MRP
Length of Screen not submerged (ft):	**-92.94**			Bottom of Screen:	570.00 ft MRP

Deployment Team: Team

Date Deployed: 12/14/2020 **Time Deployed:** 13:11

PID: MiniRAE 3000 - 592-915790 WH0004

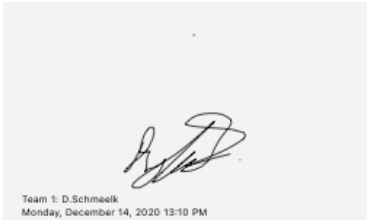
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	555.70
✓	2	558.30
	3	560.90
	4	563.50
	5	566.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106224 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW224-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:28 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW224-211
Duplicate ID:
COC#: COC-224-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106230 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW230-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	521.00 ft MRP
Previous Depth to Water (MRP):	**451**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	501.00 ft MRP
Length of Screen not submerged (ft):	**-50**			Bottom of Screen:	516.00 ft MRP

Deployment Team: Team

Date Deployed: 12/16/2020 **Time Deployed:** 10:14

PID: MiniRAE 3000 - 592-915790 WH0004

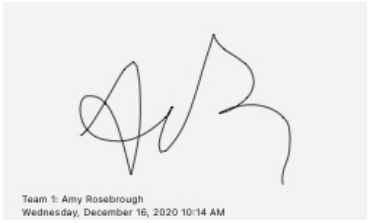
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):

No QC sample required

Analyte(s):

- Alkalinity
- Anions
- Dissolved Metals
- EDB
- NO3/NO2-N
- Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	501.70
✓	2	504.30
✓	3	506.90
	4	509.50
	5	512.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106230 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW230-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:42 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓	✓					
Anions		✓						
Nitrate / Nitrite	✓							

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW230-211
Duplicate ID:
COC#: COC-230-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106231 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW231-211

Well Information				Well Depth:	480.00	ft MRP
Screen Interval Length (ft):	**35**			Top of Screen:	440.00	ft MRP
Previous Depth to Water (MRP):	**454.19**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	475.00	ft MRP
Length of Screen not submerged (ft):	**14.19**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 13:27

PID: MiniRAE 3000 - 592-915790 WH0004

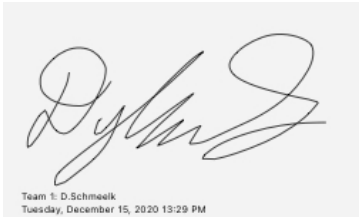
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 453.12

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
	1	440.70
	2	443.30
	3	445.90
	4	448.50
	5	451.10
✓	6	453.70
✓	7	456.30
	8	458.90
	9	461.50
	10	464.10

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106231 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW231-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW231-211
Duplicate ID:
COC#: COC-231-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Year: 2021
Well Location ID: KAFB-106232 *Deployment*
Quarter: 1
Sample ID: GW232-211

Well Information					
Screen Interval Length (ft):	**15**			Well Depth:	523.00 ft MRP
Previous Depth to Water (MRP):	**453.73**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	503.00 ft MRP
Length of Screen not submerged (ft):	**-49.27**			Bottom of Screen:	518.00 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 13:41

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes: Got logged out of collect. Log back in and that partially completed form was still partially completed.

QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	503.70
✓	2	506.30
	3	508.90
	4	511.50
	5	514.10

Depths highlighted gray represent submerged samplers based on previous water level

Team 1: D.Schmeelk
Tuesday, December 15, 2020 13:42 PM

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106232 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW232-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:47 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW232-211
Duplicate ID:
COC#: COC-232-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-438 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW235-438-211

Well Information					
Screen Interval Length (ft):	**25**			Well Depth:	465.00 ft MRP
Previous Depth to Water (MRP):	**441.54**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	438.00 ft MRP
Length of Screen not submerged (ft):	**3.54**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	463.00 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 14:55

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 441.10

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
	1	438.70
✓	2	441.30
✓	3	443.90
	4	446.50
	5	449.10
	6	451.70
	7	454.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-438 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW235-438-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:43 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW235-438-211
Duplicate ID:
COC#: COC-235-438-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-472 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW235-472-211

Well Information					
Screen Interval Length (ft):	**20**			Well Depth:	494.00 ft MRP
Previous Depth to Water (MRP):	**441.52**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	472.00 ft MRP
Length of Screen not submerged (ft):	**-30.48**			Bottom of Screen:	492.00 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 15:06

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
MS/MSD sample required; please deploy extra samplers	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	472.70
✓	2	475.30
✓	3	477.90
	4	480.50
	5	483.10
	6	485.70
	7	488.30

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-472 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW235-472-211

Date Sampled: 01/04/2021 **Time Sampled:** 13:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW235-472-211
Duplicate ID:
COC#: COC-235-472-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-501 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW235-501-211

Well Information					
Screen Interval Length (ft):	**20**			Well Depth:	523.00 ft MRP
Previous Depth to Water (MRP):	**441.6**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	501.00 ft MRP
Length of Screen not submerged (ft):	**-59.4**			Bottom of Screen:	521.00 ft MRP

Deployment Team: Team

Date Deployed: 12/15/2020 **Time Deployed:** 15:12

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	Analyte(s):
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	501.70
✓	2	504.30
	3	506.90
	4	509.50
	5	512.10
	6	514.70
	7	517.30

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106235-501 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW235-501-211

Date Sampled: 01/04/2021 **Time Sampled:** 13:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW235-501-211
Duplicate ID:
COC#: COC-235-501-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-436 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW236-436-211

Well Information				Well Depth:	463.00	ft MRP
Screen Interval Length (ft):	**25**			Top of Screen:	436.00	ft MRP
Previous Depth to Water (MRP):	**441.73**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	461.00	ft MRP
Length of Screen not submerged (ft):	**5.73**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 14:19

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 441.17

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
	1	436.70
	2	439.30
✓	3	441.90
✓	4	444.50
	5	447.10
	6	449.70
	7	452.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-436 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW236-436-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW236-436-211
Duplicate ID: GW236-436-611
COC#: COC-236-436-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-470 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW236-470-211

Well Information				Well Depth:	492.00	ft MRP
Screen Interval Length (ft):	**20**			Top of Screen:	470.00	ft MRP
Previous Depth to Water (MRP):	**441.73**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	490.00	ft MRP
Length of Screen not submerged (ft):	**-28.27**					

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 14:25

PID: MiniRAE 3000 - 592-915790 WH0004

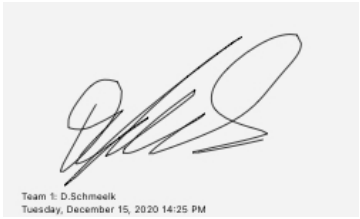
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	470.70
✓	2	473.30
	3	475.90
	4	478.50
	5	481.10
	6	483.70
	7	486.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-470 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW236-470-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:05 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW236-470-211
Duplicate ID:
COC#: COC-236-470-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-499 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW236-499-211

Well Information					
Screen Interval Length (ft):	**20**			Well Depth:	521.00 ft MRP
Previous Depth to Water (MRP):	**441.77**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	499.00 ft MRP
Length of Screen not submerged (ft):	**-57.23**			Bottom of Screen:	519.00 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 14:33

PID: MiniRAE 3000 - 592-915790 WH0004

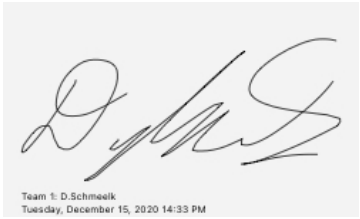
Water Level Meter: NA

PID Reading: 0.0 **ppm**

Depth to Water: NA

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- EDB

	Sampler Number:	Top of Sampler Depth (MRP)
✓	1	499.70
✓	2	502.30
	3	504.90
	4	507.50
	5	510.10
	6	512.70
	7	515.30

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106236-499 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW236-499-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)								
Metals (Total)								
Alkalinity								
Anions								
Nitrate / Nitrite								

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW236-499-211
Duplicate ID:
COC#: COC-236-499-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106240-449 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW240-449-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	491.04 ft MRP
Previous Depth to Water (MRP):	**471.62**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	449.00 ft MRP
Length of Screen not submerged (ft):	**22.62**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	489.00 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 14:07

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 471.23

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	449.70
	2	452.30
	3	454.90
	4	457.50
	5	460.10
	6	462.70
	7	465.30
	8	467.90
	9	470.50
✓	10	473.10
✓	11	475.70
✓	12	478.30
	13	480.90
	14	483.50
	15	486.10

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106240-449 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW240-449-211

Date Sampled: 01/04/2021 **Time Sampled:** 08:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓	✓					
Anions	✓							
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW240-449-211
Duplicate ID:
COC#: COC-240-449-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106241-428 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW241-428-211

Well Information				Well Depth:	470.10	ft MRP
Screen Interval Length (ft):	**40**			Top of Screen:	428.00	ft MRP
Previous Depth to Water (MRP):	**450.65**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	468.00	ft MRP
Length of Screen not submerged (ft):	**22.65**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: Team

Date Deployed: 12/16/2020 **Time Deployed:** 10:45

PID: MiniRAE 3000 - 592-915790 WH0004

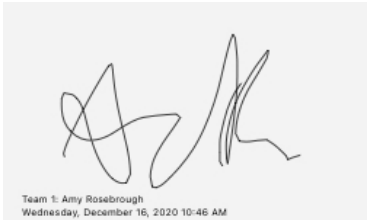
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 450.19

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	428.70
	2	431.30
	3	433.90
	4	436.50
	5	439.10
	6	441.70
	7	444.30
	8	446.90
	9	449.50
✓	10	452.10
✓	11	454.70
✓	12	457.30
✓	13	459.90
✓	14	462.50
	15	465.10

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 1/27/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106241-428 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW241-428-211

Date Sampled: 01/04/2021 **Time Sampled:** 13:10 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓						✓	
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)	✓	✓					✓	
Metals (Total)		✓	✓				✓	
Alkalinity			✓	✓			✓	
Anions				✓			✓	
Nitrate / Nitrite			✓	✓			✓	

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW241-428-211
Duplicate ID: GW241-428-611
COC#: COC-241-428-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106242-418 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW242-418-211

Well Information				Well Depth:	460.14	ft MRP
Screen Interval Length (ft):	**40**			Top of Screen:	418.00	ft MRP
Previous Depth to Water (MRP):	**440.99**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	458.00	ft MRP
Length of Screen not submerged (ft):	**22.99**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/15/2020 **Time Deployed:** 11:28

PID: MiniRAE 3000 - 592-915790 WH0004

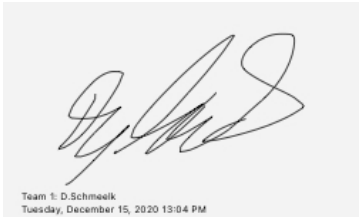
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 440.64

DMS Tether and Reel ID match Well ID? DS

Notes: Returns to add third DMS. Redeployed at 1304



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**418.70**
	2	**421.30**
	3	**423.90**
	4	**426.50**
	5	**429.10**
	6	**431.70**
	7	**434.30**
	8	**436.90**
	9	**439.50**
✓	**10**	**442.10**
✓	**11**	**444.70**
✓	**12**	**447.30**
	13	**449.90**
	14	**452.50**
	15	**455.10**

✓ **Indicates sampler deployment position**
Dotted line indicates current water level
Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106242-418 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW242-418-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓						
Anions	✓							
Nitrate / Nitrite	✓							

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW242-418-211
Duplicate ID:
COC#: COC-242-418-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106243-425 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW243-425-211

Well Information				Well Depth:	467.54	ft MRP
Screen Interval Length (ft):	**40**			Top of Screen:	425.00	ft MRP
Previous Depth to Water (MRP):	**445.95**	**(Gauged on 11/04/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	465.00	ft MRP
Length of Screen not submerged (ft):	**20.95**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 15:06

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 445.63

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
MS/MSD sample required; please deploy extra samplers	- Alkalinity - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	425.70
	2	428.30
	3	430.90
	4	433.50
	5	436.10
	6	438.70
	7	441.30
	8	443.90
✓	9	446.50
✓	10	449.10
✓	11	451.70
✓	12	454.30
✓	13	456.90
✓	14	459.50
	15	462.10

✓ Indicates sampler deployment position
Dotted line indicates current water level
Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106243-425 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW243-425-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							✓
VOCs								
BTEX								
BTEXN								
Metals (Dissolved)	✓	✓	✓					✓
Metals (Total)		✓	✓	✓				✓
Alkalinity				✓				
Anions				✓				
Nitrate / Nitrite					✓			

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW243-425-211
Duplicate ID:
COC#: COC-243-425-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106244-445 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW244-445-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	487.09 ft MRP
Previous Depth to Water (MRP):	**467.08**	**(Gauged on 11/04/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	445.00 ft MRP
Length of Screen not submerged (ft):	**22.08**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	485.00 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/16/2020 **Time Deployed:** 14:30

PID: MiniRAE 3000 - 592-915790 WH0004

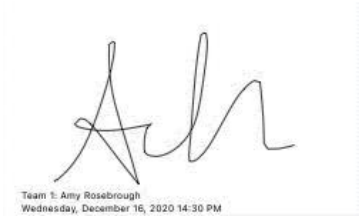
Water Level Meter: Solinst 750 ft - Clean - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 466.60

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**445.70**
	2	**448.30**
	3	**450.90**
	4	**453.50**
	5	**456.10**
	6	**458.70**
	7	**461.30**
	8	**463.90**
	9	**466.50**
✓	**10**	**469.10**
✓	**11**	**471.70**
✓	**12**	**474.30**
	13	**476.90**
	14	**479.50**
	15	**482.10**

✓ **Indicates sampler deployment position**
Dotted line indicates current water level
Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106244-445 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW244-445-211

Date Sampled: 01/04/2021 **Time Sampled:** 09:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓	✓					
Anions	✓							
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW244-445-211
Duplicate ID:
COC#: COC-244-445-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106245-460 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW245-460-211

Well Information				Well Depth:	505.67	ft MRP
Screen Interval Length (ft):	**40**			Top of Screen:	463.67	ft MRP
Previous Depth to Water (MRP):	**485.78**	**(Gauged on 11/04/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	503.67	ft MRP
Length of Screen not submerged (ft):	**22.11**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 09:55

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Clean - Solinst 750 ft - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 485.46

DMS Tether and Reel ID match Well ID? DS

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	464.37
	2	466.97
	3	469.57
	4	472.17
	5	474.77
	6	477.37
	7	479.97
	8	482.57
	9	485.17
✓	10	487.77
✓	11	490.37
✓	12	492.97
	13	495.57
	14	498.17
	15	500.77

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106245-460 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW245-460-211

Date Sampled: 01/04/2021 **Time Sampled:** 10:30 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓	✓					
Anions			✓					
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW245-460-211
Duplicate ID:
COC#: COC-245-460-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106247-450 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GW247-450-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	495.64 ft MRP
Previous Depth to Water (MRP):	**475.51**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	453.32 ft MRP
Length of Screen not submerged (ft):	**22.19**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	493.32 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 10:34

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Clean - Solinst 750 ft - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 475.15

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**454.02**
	2	**456.62**
	3	**459.22**
	4	**461.82**
	5	**464.42**
	6	**467.02**
	7	**469.62**
	8	**472.22**
	9	**474.82**
✓	**10**	**477.42**
✓	**11**	**480.02**
✓	**12**	**482.62**
✓	**13**	**485.22**
✓	**14**	**487.82**
	15	**490.42**

✓ **Indicates sampler deployment position**

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106247-450 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GW247-450-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:30 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓						✓	
VOCs								
BTEX	✓						✓	
BTEXN								
Metals (Dissolved)		✓					✓	
Metals (Total)		✓					✓	
Alkalinity				✓	✓		✓	
Anions	✓			✓			✓	
Nitrate / Nitrite		✓	✓	✓			✓	

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GW247-450-211
Duplicate ID: GW247-450-611
COC#: COC-247-450-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S1-447 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS1-447-211

Well Information				Well Depth:	489.99	ft MRP
Screen Interval Length (ft):	**40**			Top of Screen:	447.00	ft MRP
Previous Depth to Water (MRP):	**468.89**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Bottom of Screen:	487.00	ft MRP
Length of Screen not submerged (ft):	**21.89**	Water level <5ft above top of screen or screen not submerged				

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/17/2020 **Time Deployed:** 12:33

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.1 **ppm**

Depth to Water: 468.64

DMS Tether and Reel ID match Well ID? AR

Notes: Deployed based on tether and screen intervals found on Q4 forms



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	447.70
	2	450.30
	3	452.90
	4	455.50
	5	458.10
	6	460.70
	7	463.30
	8	465.90
	9	468.50
✓	10	471.10
✓	11	473.70
✓	12	476.30
	13	478.90
	14	481.50
	15	484.10

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S1-447 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS1-447-211

Date Sampled: 01/04/2021 **Time Sampled:** 14:25 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes: 1 bubblw less than 1mm in 1 BTEX bottle

Sample ID: GWS1-447-211
Duplicate ID:
COC#: COC-S1-447-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S2-451 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS2-451-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	496.90 ft MRP
Previous Depth to Water (MRP):	**476.39**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	454.23 ft MRP
Length of Screen not submerged (ft):	**22.16**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	494.23 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/17/2020 **Time Deployed:** 15:38

PID: MiniRAE 3000 - 592-915790 WH0004

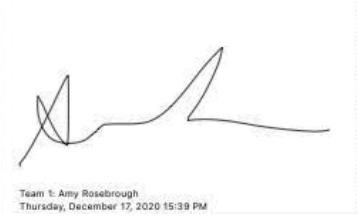
Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.0 **ppm**

Depth to Water: 476.03

DMS Tether and Reel ID match Well ID? AR

Notes: Deployed based on tether and screen intervals found on Q4 forms. Rings 10, 11, 12, 13, 14, 15. Not listed on form, so couldnt select. Used engineering controls to mitigate exposure to fumes.



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
MS/MSD sample required; please deploy extra samplers	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**454.93**
	2	**457.53**
	3	**460.13**
	4	**462.73**
	5	**465.33**
	6	**467.93**
	7	**470.53**
	8	**473.13**
	9	**475.73**
✓	**10**	**478.33**
✓	**11**	**480.93**
✓	**12**	**483.53**
✓	**13**	**486.13**
✓	**14**	**488.73**
✓	**15**	**491.33**

✓ **Indicates sampler deployment position**

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S2-451 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS2-451-211

Date Sampled: 01/04/2021 **Time Sampled:** 15:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.1 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							✓
VOCs								
BTEX	✓	✓						✓
BTEXN								
Metals (Dissolved)		✓	✓	✓				✓
Metals (Total)		✓	✓	✓				✓
Alkalinity					✓			
Anions				✓				
Nitrate / Nitrite					✓			

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GWS2-451-211
Duplicate ID:
COC#: COC-S2-451-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S3-449 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS3-449-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	494.42 ft MRP
Previous Depth to Water (MRP):	**475.56**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	452.18 ft MRP
Length of Screen not submerged (ft):	**23.38**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	492.18 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/17/2020 **Time Deployed:** 16:07

PID: MiniRAE 3000 - 592-915579 WH0006

Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.5 **ppm**

Depth to Water: 475.31

DMS Tether and Reel ID match Well ID? AR

Notes: Deployed based on tether and screen intervals found on Q4 forms



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	452.88
	2	455.48
	3	458.08
	4	460.68
	5	463.28
	6	465.88
	7	468.48
	8	471.08
	9	473.68
✓	10	476.28
✓	11	478.88
✓	12	481.48
	13	484.08
	14	486.68
	15	489.28

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S3-449 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS3-449-211

Date Sampled: 01/08/2021 **Time Sampled:** 10:10 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GWS3-449-211
Duplicate ID:
COC#: COC-S3-449-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S4-446 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS4-446-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	491.73 ft MRP
Previous Depth to Water (MRP):	**470.45**	**(Gauged on 11/04/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	449.23 ft MRP
Length of Screen not submerged (ft):	**21.22**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	489.23 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 09:30

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Clean - Solinst 750 ft - 350333 WH0567

PID Reading: 0.0 **ppm**

Depth to Water: 470.16

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**449.93**
	2	**452.53**
	3	**455.13**
	4	**457.73**
	5	**460.33**
	6	**462.93**
	7	**465.53**
	8	**468.13**
✓	**9**	**470.73**
✓	**10**	**473.33**
✓	**11**	**475.93**
	12	**478.53**
	13	**481.13**
	14	**483.73**
	15	**486.33**

✓ **Indicates sampler deployment position**

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S4-446 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS4-446-211

Date Sampled: 01/04/2021 **Time Sampled:** 11:00 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions	✓							
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: GWTS/Pending Disposal Area

Notes:

Sample ID: GWS4-446-211
Duplicate ID:
COC#: COC-S4-446-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S5-446 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS5-446-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	488.32 ft MRP
Previous Depth to Water (MRP):	**467.9**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	446.08 ft MRP
Length of Screen not submerged (ft):	**21.82**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	486.08 ft MRP

Deployment Team: Amy Rosebrough,Dylan Shmeelk

Date Deployed: 12/18/2020 **Time Deployed:** 07:18

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.5 **ppm**

Depth to Water: 467.61

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	446.78
	2	449.38
	3	451.98
	4	454.58
	5	457.18
	6	459.78
	7	462.38
	8	464.98
	9	467.58
✓	10	470.18
✓	11	472.78
✓	12	475.38
	13	477.98
	14	480.58
	15	483.18

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S5-446 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS5-446-211

Date Sampled: 01/08/2021 **Time Sampled:** 08:45 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions	✓							
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GWS5-446-211
Duplicate ID:
COC#: COC-S5-446-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S7-451 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS7-451-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	492.60 ft MRP
Previous Depth to Water (MRP):	**473.29**	**(Gauged on 11/02/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	451 ft MRP
Length of Screen not submerged (ft):	**22.29**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	491 ft MRP

Deployment Team: Amy Rosebrough,Dylan Shmeelk

Date Deployed: 12/18/2020 **Time Deployed:** 07:48

PID: MiniRAE 3000 - 592-915790 WH0004

Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.0 **ppm**

Depth to Water: 472.91

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	451.70
	2	454.30
	3	456.90
	4	459.50
	5	462.10
	6	464.70
	7	467.30
	8	469.90
	9	472.50
✓	10	475.10
✓	11	477.70
✓	12	480.30
	13	482.90
	14	485.50
	15	488.10

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S7-451 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS7-451-211

Date Sampled: 01/08/2021 **Time Sampled:** 09:20 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity		✓						
Anions			✓					
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GWS7-451-211
Duplicate ID:
COC#: COC-S7-451-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S8-451 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS8-451-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	494.22 ft MRP
Previous Depth to Water (MRP):	**475.30**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	454.22 ft MRP
Length of Screen not submerged (ft):	**21.08**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	494.22 ft MRP

Deployment Team: D.Schmeelk, A.Rosebrough

Date Deployed: 12/17/2020 **Time Deployed:** 11:16

PID: MiniRAE 3000 - 592-915778 WH0004

Water Level Meter: Hazardous - Solinst 500 ft - 253056 WH0571

PID Reading: 0.0 **ppm**

Depth to Water: 475.12

DMS Tether and Reel ID match Well ID? AR

Notes:



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
Duplicate sample required; please deploy extra samplers	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	**Top of Sampler Depth (MRP)**
	1	**454.92**
	2	**457.52**
	3	**460.12**
	4	**462.72**
	5	**465.32**
	6	**467.92**
	7	**470.52**
	8	**473.12**
✓	**9**	**475.72**
✓	**10**	**478.32**
✓	**11**	**480.92**
✓	**12**	**483.52**
✓	**13**	**486.12**
	14	**488.72**
	15	**491.32**

✓ **Indicates sampler deployment position**

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S8-451 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS8-451-211

Date Sampled: 01/04/2021 **Time Sampled:** 12:30 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.1 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915579 WH0006

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes: Top two bags were not fully submerged, therefore only took primary sample.

Sample ID: GWS8-451-211
Duplicate ID: GWS8-451-611
COC#: COC-S8-451-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S9-447 ***Deployment***

Year: 2021
Quarter: 1
Sample ID: GWS9-447-211

Well Information					
Screen Interval Length (ft):	**40**			Well Depth:	489.49 ft MRP
Previous Depth to Water (MRP):	**469.94**	**(Gauged on 11/03/2020)**	**LNAPL NOT detected during prior gauging**	Top of Screen:	447.12 ft MRP
Length of Screen not submerged (ft):	**22.820001**	Water level <5ft above top of screen or screen not submerged		Bottom of Screen:	487.12 ft MRP

Deployment Team: Amy Rosebrough, Dylan Schmeelk

Date Deployed: 12/17/2020 **Time Deployed:** 15:06

PID: MiniRAE 3000 - 592-915579 WH0006

Water Level Meter: Solinst 500 ft - Hazardous - 253056 WH0571

PID Reading: 0.0 **ppm**

Depth to Water: 469.65

DMS Tether and Reel ID match Well ID? AR

Notes: Deployed based on tether and screen intervals found on Q4 forms



QC Sample notes (if blank, no QC samples required):	**Analyte(s):**
No QC sample required	- Alkalinity - BTEX - Anions - Dissolved Metals - EDB - NO3/NO2-N - Total Metals

	Sampler Number:	Top of Sampler Depth (MRP)
	1	447.82
	2	450.42
	3	453.02
	4	455.62
	5	458.22
	6	460.82
	7	463.42
	8	466.02
	9	468.62
✓	10	471.22
✓	11	473.82
✓	12	476.42
	13	479.02
	14	481.62
	15	484.22

✓ Indicates sampler deployment position

Dotted line indicates current water level

Depths highlighted gray represent submerged samplers based on previous water level

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Passive Diffusion Water Sampling Data Sheet

Well Location ID: KAFB-106S9-447 *Sampling*

Year: 2021
Quarter: 1
Sample ID: GWS9-447-211

Date Sampled: 01/08/2021 **Time Sampled:** 11:15 **Sampling Team:** D.Schmeelk, A.Rosebrough

PID Reading: 0.0 **DMS Tether, Reel, and Well ID's match? (Initial to confirm)** AR

Type of Analysis	Sampler Number (shallow to deep) 1	2	3	4	5	6	Dup?	MS/MSD?
EDB	✓							
VOCs								
BTEX	✓							
BTEXN								
Metals (Dissolved)	✓							
Metals (Total)		✓						
Alkalinity			✓					
Anions		✓						
Nitrate / Nitrite		✓						

PID Model – SN – WH#: MiniRAE 3000 - 592-915778 WH0004

IDW will be taken to: 90-Day Hazardous Waste Storage Yard

Notes:

Sample ID: GWS9-447-211
Duplicate ID:
COC#: COC-S9-447-211

Reveiwed By: amanda m smith **Reviewed Date:** 3/15/2021

Groundwater Purge and Sampling Log

Year: 2021
Quarter: 1 (Jan-Mar)

Project: Kirtland AFB BFF ST-106/SS-111
Well ID: KAFB-106S10-443
Project No: 6360401
Samplers: D.Schuyelk, J.Messenger
Date: 1-15-2021
Crew Signature:

Well Information

Well Depth: 487.8 ft MRP
Top of Screen: 445.8 ft MRP
Bottom of Screen: 485.8 ft MRP
Barricade/Notification: ☐
Measurement Reference Point (MRP):
Reference Elevation Interval: ____
IDW will be taken to: <90-day Yard
IDW Label: Orange - Hazardous Label

Protective Casing/Vault: (Intact) Damaged
Well Locked/Security Bolt Present: (Yes) No
Well ID Marked: (Yes) No

Photoionization Measurements at Wellhead: 0.0 ppm

LNAPL Present (circle one)? Yes (No)
LNAPL Thickness: — ft

Previous Depth to water: — ft MRP
Depth to Water (DTW): 472.14 ft MRP

Pump Information

Bennett Pump Serial No.: 1807B-902

Non-Dedicated Pump Depth: 483.8 ft MRP

* - if screen is submerged, place pump 2 ft below top of screen; if not submerged, place pump 2 ft above bottom of screen.

Field Instrumentation

pH, Conductivity, ORP, DO, Temperature	YSI Professional Plus	Serial No:	18J100378
PID:	MiniRAE 3000	Serial No:	592-000006
Water Level Meter:	Solinst 500 ft	Serial No:	253056
Turbidity Meter:	Hach 2100Q	Serial No:	19H0007

Sample Information

Sample ID: GWS10-443-211
Sampling Method: Low-flow
Duplicate ID: (if applicable) GWS10-443-611
Sampling Medium: Water
COC#: COC-S10-443-211

Reviewed by: Amanda Smith Initials: AS Review Date: 3/31/2021

Page 1 of 2

Groundwater Purge and Sampling Log

Year: 2021
Quarter: 1 (Jan-Mar)

Project: Kirtland AFB BFF ST-106/SS-111 Well ID: KAFB-106S10-443

Date: 1-15-2021

Purge Information and Field Parameter

Purge Start Time: 0836 Purge Rate: 0.780 L/min X 0.265 = 0.2067 gal/min

Description of first water purged: Clear with moderate VOC odor

Drawdown Limit: — ft (based on previous water level)

Time	DTW (ft)	Turbidity (NTU)	Temp. (°C)	Saturated DO (%)	DO (mg/L)	Specific Conductance (µS/cm)	pH	ORP (mV)
Stabilization Requirements	-------	If >10,±10%	±10%	-------	±10%	±10%	±0.5	-------
Historical Data:				-------				
0840	472.15	283	15.2	103.1	9.90	422.9	7.50	399.1
0845	472.15	253.0	16.5	38.7	3.73	514.6	7.35	378.6
0850	472.15	3.54	17.0	27.3	2.59	516.9	7.42	356.4
0855	472.15	2.44	17.1	24.0	2.30	515.3	7.46	334.4
0900	472.15	1.78	17.4	22.9	2.19	514.3 440.78	7.42	310.3
0905	472.15	2.04	17.1	20.9	2.00	520.5	7.38	272.1
0910	472.15	1.86	17.3	19.9	1.92	520.5	7.39	229.1
0915	472.15	2.03	17.3	18.9	1.82	519.6	7.36	186.1

Sample Time: 0925 Sample Date: 1-15-2021

Purge End Time: 0927 6mm

Bubbles in the vials?: ☐ Yes ☒ No Where? — Amount — Size —

Sampled by: D. Schmeelk Sampler Signature:

IDW Management

Drum No.	Estimated volume per IDW drum (gal)
1	10.5
2	5.5 decon
Total	16 gallons

IDW will be taken to: <90-day Yard

IDW Label: Orange - Hazardous Label

Comments:

Reviewed by: Amanda Smith Initials: AS Review Date: 3/31/2021

Page 2 of 2

GROUND WATER SAMPLE COLLECTION LOG

Project Name: KAFB ROS
Site Location: Kirtland AFB, SWMU ST-106/SS-111
Project No.: 501397
Well ID: KAFB-106 064
Sample ID: 106064-LTM-011121
Date / Time Collected: 1/11/21 0945
Sample Collected by: CL, LB

EQUIPMENT / NOTES

Purging Method/Equipment: ☑ Micropurge
Sampling Equipment.: ☑ Bladder Pump ☐ Other
Flow Rate During Purging: 300 mL/stroke
Note: Flowrate for VOC sampling should be no greater than 1 L/min
Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point: TOC
Casing ID (in.): 5"
Depth to Water - Initial (DTWi) (ft btoc): 474.93 ft btoc
Depth to Well Bottom (ft btoc): 513
Screen Interval (ft btoc): 488 - 508
Approximate depth of pump inlet (ft btoc): 495
Length of Casing (ft): N/A
Depth to LNAPL (ft btoc): None

FIELD CONDITIONS

Weather Conditions: ✓ Sunny ☐ Rain ☐ Wind ☐ Cloudy Temperature: 29 F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (mS/cm)	Temperature (°C)	pH	Turbidity (NTU)	ORP (mV)	DO (mg/L)
Purge Stabilization Criteria	300 mL/ Stroke	ft btoc	±10%	± 10%	±10%	± 10%	± 10 mV	±10%
0817	"	474.93	1.190	15.0	6.98	13.3	-116.2	0.71
0830	"	"	1.167	15.1	6.87	14.9	-99.5	0.42
0840	"	"	1.162	15.3	6.86	16.4	-101.6	0.34
0850	"	"	1.160	15.2	6.86	15.8	-105.9	0.30
0900	"	"	1.152	15.3	6.85	16.3	-109.0	0.25
0910	"	"	1.153	15.4	6.85	17.7	-111.0	0.23
0920	"	"	1.154	15.7	6.84	11.0	-107.7	0.20
0930	"	"	1.152	15.7	6.84	13.7	-109.3	0.19
0940	"	"	1.159	15.8	6.83	12.3	-107.5	0.18

☒ Duplicate or MS/MSD Collected: 106064-LTM-011121-FD

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: 50
Discharge: 23
psi (start): 240
psi (finish): 270

Pump on: 0800
First Water: 0802
QED Controller #: 1408
YSI #: 106410
Water level #: Solinist Interface
Turbidity Meter #: FSLVE

APTIM

Sample Collection Log

501397 ISB LTM – Groundwater

Location Code KAFB-106064 RFA/COC Number 501397-

Sample Number 106064-LTM-011121 Collection Date 1/11/21

Sampling Method Low Flow Collection Time 0945

Sample Type Grab Start Depth 488

QC Code Normal End Depth 508

Sampling Equipment Bladder Pump Sample Matrix GW

QC Partners 106064-LTM-011121-FD Sample Team CL, LB

Containers:

Analytical Suite	Filtered	Qty	Size	Container Type	Preservative	Lab
EDB by 8011	NA	3	40 mL	VOA Vials	None	ALS Houston
VOCs by 8260	NA	3	40 mL	VOA Vials	HCl	ALS Houston
Dissolved O-Phosphate by EPA Method 365.3	Yes	1	250 mL	Poly Bottle	None	ALS Houston
Dissolved Fe and Mn by 6020A	Yes	1	125 mL	Poly Bottle	HNO3	ALS Houston
Total Lead by 6020	NA	1	125 mL	Poly Bottle	HNO3	ALS Houston
Anions (Chloride, Sulfate, Bromide, Nitrate and Nitrite) by EPA 300 and Alkalinity by SM2320B	NA	1	125 mL	Poly Bottle	None	ALS Houston
Iodide by EPA 300	NA	1	250 mL	Poly Bottle	None	ALS Cincinnati
Reduced/Dissolved Gases by RSKSOP-175/EPA 3810	NA	2	40 mL	VOA Vials	HCl	APTIM
VFA by EPA 300m	NA	2	40 mL	VOA Vials	None	APTIM
Quant-Array Chlor	NA	1	1 L	Poly Bottle	None	Microbial Insights

Comments/Descriptions: DTW = 474.93 ft btoc. No measurable LNAPL.

Logged By/Date: 1/11/21 **Reviewed By/Date:**

GROUND WATER SAMPLE COLLECTION LOG

Project Name: KAFB ROS
Site Location: Kirtland AFB, SWMU ST-106/SS-111
Project No.: 501397
Well ID: KAFB-106 063
Sample ID: 106 063-GTM-01121
Date / Time Collected: 1041 1/11/21
Sample Collected by: LB

EQUIPMENT / NOTES

Purging Method/Equipment: Micropurge
Sampling Equipment.: ☑ Bladder Pump ☐ Other
Flow Rate During Purging : 300 mL/stroke
Note: Flowrate for VOC sampling should be no greater than 1 L/min
Daily field instrument calibration verification performed? Yes ✓ No ___

PURGING INFORMATION

Measuring Point: TOC
Casing ID (in.): 5 & 11
Depth to Water - Initial (DTWI) (ft btoc): ~474.98
Depth to Well Bottom (ft btoc): 528
Screen Interval (ft btoc): 508-523
Approximate depth of pump inlet (ft btoc): 511
Length of Casing (ft): ~~N/A~~ 3 ft
Depth to LNAPL (ft btoc): None

FIELD CONDITIONS

Weather Conditions: ☒ Sunny ☐ Rain ☐ Wind ☐ Cloudy Temperature: 25°F

Time of Reading	Volume Purged (mL)	Dynamic Depth to Water	Conductivity (mS/cm)	Temperature (°C)	pH	Turbidity (NTU)	ORP (mV)	DO (mg/L)
Purge Stabilization Criteria	mL/stroke	ft btoc	±10%	± 10%	±10%	± 10%	± 10 mV	±10%
0818	300	474.90	0.917	14.2	7.77	15.5	27.9	10.7
0832		475.0	0.899	14.9	7.40	15.6	163.2	1.50
0844		474.98	0.948	14.6	7.27	14.7	75.2	0.84
0856		474.99	0.915	15.0	7.21	16.1	33.4	0.55
0908		474.97	0.804	15.0	7.23	22.6	-2.0	0.35
0920		474.99	0.796	15.4	7.20	13.0	-20.5	0.31
0930		474.99	0.790	15.6	7.20	16.0	-54.3	0.24
0940		474.99	0.770	15.3	7.16	16.3	-75.9	0.19
0950		474.9	0.771	15.2	7.19	15.1	-93.8	0.13
1000		474.99	0.760	15.5	7.17	15.0	-106.3	0.09
1010		479.99	0.760	15.6	7.19	15.7	-116.5	0.05
1020		479.99	0.771	15.7	7.21	15.6	-125.2	0.05
1030		479.99	0.763	15.7	7.20	15.6	-129.0	0.03
1040	↓	479.99	0.763	15.7	7.21	15.7	-134.6	0.02

☐ **Duplicate or MS/MSD Collected:** None

If the water level is above the top of the screen, the pump should be set at the approximate mid-point of the screen. If the water level is below the top of the screen, set the pump between the water level and the bottom of the screen.

Recharge: 60
Discharge: 22
psi (start): 270
psi (finish): 250

Pump on: 0800
First Water: 0802
QED Controller #: 1409
YSI #: 104358
Water level #: Solinst WL
Turbidity Meter #: FSLVE0203

APTIM

Sample Collection Log

501397 ISB LTM – Groundwater

Location Code KAFB-106063
Sample Number 106063-LTM-011121
Sampling Method Low Flow
Sample Type Grab
QC Code Normal
Sampling Equipment Bladder Pump
QC Partners None

RFA/COC Number 501397-GW
Collection Date 1/11/21
Collection Time 1041
Start Depth 508
End Depth 523
Sample Matrix GW
Sample Team CL, LB

Containers:

Analytical Suite	Filtered	Qty	Size	Container Type	Preservative	Lab
EDB by 8011	NA	3	40 mL	VOA Vials	None	ALS Houston
VOCs by 8260	NA	3	40 mL	VOA Vials	HCl	ALS Houston
Dissolved O-Phosphate by EPA Method 365.3	Yes	1	250 mL	Poly Bottle	None	ALS Houston
Dissolved Fe and Mn by 6020A	Yes	1	125 mL	Poly Bottle	HNO3	ALS Houston
Total Lead by 6020	NA	1	125 mL	Poly Bottle	HNO3	ALS Houston
Anions (Chloride, Sulfate, Bromide, Nitrate and Nitrite) by EPA 300 and Alkalinity by SM2320B	NA	1	125 mL	Poly Bottle	None	ALS Houston
Iodide by EPA 300	NA	1	250 mL	Poly Bottle	None	ALS Cincinnati
Reduced/Dissolved Gases by RSKSOP-175/EPA 3810	NA	2	40 mL	VOA Vials	HCl	APTIM
VFA by EPA 300m	NA	2	40 mL	VOA Vials	None	APTIM
Quant-Array Chlor	NA	1	1 L	Poly Bottle	None	Microbial Insights

Comments/Descriptions: DTW = 474.98 ftbtoc

Logged By/Date: 1/11/21

Reviewed By/Date:

Table C-3-1
Water Quality Field Measurements for the Current and Previous Three Quarters

Well Location ID	Sample Quarter	Sample Date	Turbidity (NTU)	Temperature (°C)	DO (mg/L)	Spec. Cond. (µS/cm)	pH (S.U.)	ORP (mV)
KAFB-106001	Q4 2020	10/30/2020	4.78	19.8	1.94	322.2	7.60	205.6
KAFB-106002	Q4 2020	10/20/2020	0.27	18.6	6.72	431.7	7.46	339.4
	Q2 2020	4/17/2020	0.31	18.5	6.31	410.6	7.51	303.1
KAFB-106003	Q1 2021	1/14/2021	0.59	17.2	9.49	970	7.74	335.8
	Q4 2020	10/13/2020	1.49	17.9	8.52	983	7.80	412.0
	Q3 2020	7/15/2020	2.31	20.4	6.64	602	7.79	329.9
	Q2 2020	4/30/2020	1.51	21.3	5.49	514.8	7.77	181.6
KAFB-106004	Q1 2021	1/13/2021	0.53	16.6	5.51	426.7	7.67	399.5
	Q4 2020	10/14/2020	0.59	19.7	5.83	484.1	7.73	332.1
	Q3 2020	7/16/2020	0.60	22.0	6.48	481.1	7.59	352.6
	Q2 2020	5/5/2020	0.39	20.9	7.45	393.2	7.65	166.3
KAFB-106005	Q1 2021	1/15/2021	6.72	17.5	0.22	1602	7.24	-261.8
	Q4 2020	10/23/2020	9.16	20.1	0.11	1,172	7.37	-324.8
	Q3 2020	7/13/2020	13.8	22.4	0.21	1,179	7.38	-289.1
KAFB-106006	Q4 2020	10/29/2020	2.49	18.4	1.23	588	7.48	-98.1
	Q2 2020	4/24/2020	2.79	18.4	1.60	527.8	7.69	-74.6
KAFB-106007	Q4 2020	10/5/2020	1.24	18.9	0.56	529.7	7.31	379.4
	Q2 2020	4/24/2020	1.66	21.2	4.57	389.5	7.88	242.2
KAFB-106008	Q4 2020	10/21/2020	6.82	19.7	0.13	1,138	6.84	-156.3
KAFB-106009	Q1 2021	1/11/2021	1.84	17.3	0.32	1,343	6.94	4.7
	Q4 2020	10/12/2020	1.04	21.9	0.28	1,774	6.89	156.5
KAFB-106010	Q4 2020	10/22/2020	5.01	19.4	0.19	539.0	7.03	-182.1
	Q2 2020	4/24/2020	1.11	20.7	0.80	577	7.13	-196.6
KAFB-106011	Q4 2020	10/1/2020	1.36	18.8	1.00	967	7.80	178.1
	Q2 2020	4/17/2020	1.12	18.3	0.71	1,050	7.62	291.0
KAFB-106012R	Q1 2021	1/11/2021	2.2	15.8	7.08	1,533	7.39	403.4
	Q4 2020	10/2/2020	0.97	21.3	7.44	1,610	7.27	195.8
	Q3 2020	7/14/2020	12.0	22.9	6.93	1,400	7.36	300.8
	Q2 2020	4/23/2020	0.85	23.0	6.03	1,700	7.40	228.7
KAFB-106013	Q1 2021	1/12/2021	9.26	16.0	1.45	510.2	7.73	382.6
	Q4 2020	10/13/2020	5.08	19.0	2.55	496.7	7.70	439.6
	Q3 2020	7/15/2020	6.67	23.9	4.05	451.8	7.63	278.4
	Q2 2020	5/1/2020	10.8	21.5	1.53	467.7	7.79	138.1
KAFB-106014	Q4 2020	10/29/2020	7.32	18.6	3.47	1,487	6.96	-66.2
	Q2 2020	4/24/2020	4.86	19.1	1.56	1,085	7.19	-128.6
KAFB-106016	Q4 2020	10/1/2020	3.97	19.4	1.93	368.7	7.95	149.5
	Q2 2020	4/17/2020	3.30	18.9	2.86	346.3	7.88	103.5
KAFB-106017	Q4 2020	10/19/2020	1.14	18.2	0.19	513.6	7.55	-54.2
	Q2 2020	4/21/2020	1.42	19	0.24	497.4	7.59	-64.8
KAFB-106018	Q4 2020	10/28/2020	1.82	16.6	2.10	539.2	7.76	347.6
	Q2 2020	5/8/2020	3.08	19.9	0.59	558	7.57	32.8
KAFB-106019	Q4 2020	10/8/2020	27.6	18.5	0.72	810	7.60	375.3
	Q2 2020	4/23/2020	36.6	19.8	5.27	1,895	7.45	77.8
KAFB-106020	Q4 2020	10/29/2020	123	18.2	6.11	563.3	7.61	242.1
	Q2 2020	4/28/2020	118	19.3	5.51	583	7.82	271.8
KAFB-106024	Q4 2020	10/21/2020	1.25	20.6	0.32	424.7	7.38	224.4
	Q2 2020	4/20/2020	9.44	20.1	0.56	428.1	7.57	301.7

Table C-3-1
Water Quality Field Measurements for the Current and Previous Three Quarters

Well Location ID	Sample Quarter	Sample Date	Turbidity (NTU)	Temperature (°C)	DO (mg/L)	Spec. Cond. (µS/cm)	pH (S.U.)	ORP (mV)
KAFB-106027	Q4 2020	10/1/2020	0.71	19.4	3.03	388.5	8.07	152.9
	Q2 2020	4/20/2020	3.38	18.1	3.88	385.9	7.84	348.4
KAFB-106028	Q4 2020	10/22/2020	1.71	19.1	0.11	936	6.93	-228.7
KAFB-106038	Q4 2020	10/5/2020	1.12	23.1	6.43	478.0	7.69	420.0
	Q2 2020	4/22/2020	2.46	19.7	4.07	823	7.68	286.0
KAFB-106039	Q4 2020	10/5/2020	2.68	24.0	2.41	776	7.58	383.1
	Q2 2020	4/22/2020	10.7	20.9	5.25	689	7.72	244.1
KAFB-106040	Q4 2020	10/7/2020	1.31	18.4	3.42	554.8	7.51	405.1
	Q2 2020	4/23/2020	5.12	20.3	4.47	453.9	7.69	345.2
KAFB-106044	Q4 2020	10/1/2020	0.64	19.5	3.10	374.4	8.17	167.9
	Q2 2020	4/20/2020	0.52	18.1	3.11	365.1	7.85	331.1
KAFB-106045	Q4 2020	10/8/2020	0.46	22.4	3.08	347.7	7.72	393.5
	Q2 2020	4/24/2020	0.47	18.9	2.85	354.0	7.91	348.7
KAFB-106046	Q4 2020	10/20/2020	0.95	19.5	1.70	482.7	7.58	367.0
	Q2 2020	4/22/2020	0.50	19.7	4.46	432.7	7.8	202.2
KAFB-106047	Q4 2020	10/20/2020	1.97	19.1	3.84	445.0	7.79	374.0
	Q2 2020	4/17/2020	3.40	18.5	5.81	386.8	7.27	324.3
KAFB-106048	Q4 2020	10/15/2020	27.6	21.1	5.92	387.0	7.90	399.4
	Q2 2020	4/29/2020	1.88	19.4	5.39	362.2	7.78	166.0
KAFB-106059	Q4 2020	10/23/2020	3.34	19.4	0.24	767	6.82	-117.8
	Q2 2020	5/6/2020	7.33	20.4	0.13	566	6.96	-256.6
KAFB-106060	Q4 2020	10/20/2020	0.98	18.9	6.32	735	7.59	338.9
	Q2 2020	4/20/2020	0.42	18.6	5.90	792	7.68	295.5
KAFB-106061	Q4 2020	10/15/2020	2.81	22.4	2.27	364.9	7.85	388.0
	Q2 2020	4/27/2020	5.99	22.3	3.18	349.3	7.63	138.1
KAFB-106062	Q4 2020	10/20/2020	6.18	19.0	4.04	391.4	7.73	358.3
	Q2 2020	4/21/2020	2.57	19.2	3.97	376.0	7.78	141.0
KAFB-106063[a]	Q1 2021	1/11/2021	18.6	16.1	0.18	NA	7.38	-53.6
	Q4 2020	10/14/2020	9.38	18.3	0.21	868	6.87	-129.9
	Q2 2020	5/19/2020	1.98	18.9	0.13	NA	6.90	-168.6
KAFB-106064[a]	Q1 2021	1/11/2021	12.3	15.8	0.18	NA	6.83	-107.5
	Q4 2020	10/14/2020	9.30	17.5	0.00	1189	6.72	-100.9
	Q2 2020	5/19/2020	4.84	18.3	0.05	NA	6.81	-193.6
KAFB-106065	Q4 2020	10/19/2020	2.82	16.5	5.80	644	7.16	201.3
	Q2 2020	4/22/2020	7.15	17.0	0.22	677	7.27	7.7
KAFB-106066	Q4 2020	10/16/2020	1.17	16.7	4.47	333.4	7.80	340.4
	Q2 2020	4/22/2020	0.76	17.0	4.26	381.6	7.84	175.6
KAFB-106067	Q4 2020	10/19/2020	1.07	18.6	0.13	979	7.08	-96.7
	Q2 2020	4/21/2020	2.22	18.2	0.20	559.2	7.33	35.9
KAFB-106068	Q4 2020	10/16/2020	5.30	18.4	5.85	345.1	7.75	300.7
	Q2 2020	4/20/2020	6.13	18.3	4.75	380.0	7.57	303.4
KAFB-106069	Q4 2020	10/16/2020	0.73	17.0	0.26	558.2	7.69	-54.9
	Q2 2020	4/23/2020	1.88	20.7	2.55	540.8	7.59	238.6
KAFB-106073	Q4 2020	10/12/2020	9.77	19.7	0.24	654	7.54	310.9
	Q2 2020	4/30/2020	1.15	20.2	0.84	555	7.67	139.0
KAFB-106074	Q4 2020	10/12/2020	1.21	18.0	3.45	522.4	7.68	399.5
	Q2 2020	4/30/2020	1.53	21.8	3.44	450.6	7.75	162.2

Table C-3-1
Water Quality Field Measurements for the Current and Previous Three Quarters

Well Location ID	Sample Quarter	Sample Date	Turbidity (NTU)	Temperature (°C)	DO (mg/L)	Spec. Cond. (µS/cm)	pH (S.U.)	ORP (mV)
KAFB-106075	Q4 2020	10/23/2020	6.62	18.1	4.78	1,062	7.43	287.8
	Q2 2020	4/20/2020	0.62	18.3	0.30	629	7.63	158.4
KAFB-106076	Q4 2020	10/30/2020	11.6	18.5	0.24	1,042	6.72	-65.5
	Q2 2020	4/28/2020	23.7	24.2	0.18	454.2	7.49	-242.7
KAFB-106077	Q4 2020	10/9/2020	1.99	23.9	3.84	384.7	7.69	372.9
	Q2 2020	4/27/2020	1.60	21.5	3.28	387.0	7.78	133.2
KAFB-106078	Q4 2020	10/20/2020	16.6	20.2	2.51	373.0	7.67	352.1
	Q2 2020	4/21/2020	5.02	19.8	1.89	360.9	7.82	235.6
KAFB-106079	Q4 2020	10/30/2020	9.80	18.6	0.22	1,204	6.88	-83.6
KAFB-106080	Q4 2020	11/24/2020	1.39	18.1	0.25	1,186	6.89	-69.0
	Q2 2020	4/23/2020	1.31	18.4	0.25	1,327	6.99	-18.0
KAFB-106081	Q4 2020	10/15/2020	0.71	21.8	4.32	375.8	7.80	402.6
	Q2 2020	4/29/2020	1.06	22.0	5.08	350.9	7.58	170.6
KAFB-106082	Q4 2020	10/6/2020	0.83	22.6	0.52	641	7.54	305.8
	Q2 2020	4/28/2020	0.39	23.6	1.48	582	7.46	127.2
KAFB-106083	Q4 2020	10/6/2020	0.61	18.8	0.23	419.2	7.79	257.2
	Q2 2020	4/28/2020	1.52	20.0	0.71	491.4	7.83	97.1
KAFB-106084	Q4 2020	10/6/2020	1.22	23.3	3.15	363.8	7.77	336.9
	Q2 2020	4/28/2020	1.25	22.6	3.31	366.0	7.78	150.6
KAFB-106094	Q4 2020	10/19/2020	2.23	18.9	0.21	856	7.33	-118.6
	Q2 2020	4/21/2020	1.48	18.6	0.20	511.4	7.46	59.1
KAFB-106095	Q4 2020	10/7/2020	2.27	23.7	0.22	624	7.37	356.4
	Q2 2020	4/29/2020	4.39	21.8	2.28	469.9	7.67	148.0
KAFB-106096	Q4 2020	10/7/2020	5.23	21.7	2.63	352.4	7.67	397.2
	Q2 2020	5/8/2020	5.11	19.4	4.23	357.5	7.76	134.7
KAFB-106097	Q1 2021	1/12/2021	0.48	17.5	2.69	483.5	7.79	287.2
	Q4 2020	10/13/2020	0.92	19.7	2.76	442.5	7.80	419.0
	Q3 2020	7/16/2020	0.37	19.9	2.97	395.6	7.63	349.1
	Q2 2020	5/1/2020	0.96	20.5	2.77	496.2	7.70	134.1
KAFB-106098	Q1 2021	1/12/2021	0.53	17.6	2.99	475.4	7.76	276.0
	Q4 2020	10/13/2020	0.62	19.3	2.92	490.2	7.83	441.9
	Q3 2020	7/15/2020	0.75	21.4	3.38	435.5	7.75	209.9
	Q2 2020	5/1/2020	0.73	19.3	3.32	440.1	7.44	165.5
KAFB-106099	Q1 2021	1/13/2021	7.18	18.0	5.46	434.3	7.82	287.1
	Q4 2020	10/14/2020	0.49	18.5	4.60	442.8	7.83	403.8
	Q3 2020	7/16/2020	0.69	21.0	5.59	372.6	7.71	319.2
	Q2 2020	5/5/2020	1.23	19.6	6.06	363.8	7.79	164.6
KAFB-106100	Q1 2021	1/13/2021	1.79	17.6	2.40	348.0	7.81	298.3
	Q4 2020	10/14/2020	6.26	20.7	3.69	369.6	7.81	340.1
	Q3 2020	7/16/2020	0.79	22.1	2.96	331.7	7.74	328.9
	Q2 2020	5/5/2020	1.18	19.1	2.75	331.4	7.81	162.5
KAFB-106101	Q1 2021	1/13/2021	1.17	17.8	8.87	930	7.69	294.8
	Q4 2020	10/14/2020	1.29	20.4	7.28	794	7.69	340.6
	Q3 2020	7/15/2020	0.82	19.7	6.11	432.4	7.68	345.2
	Q2 2020	5/4/2020	2.91	19.6	5.35	398.9	7.79	158.4

Table C-3-1
Water Quality Field Measurements for the Current and Previous Three Quarters

Well Location ID	Sample Quarter	Sample Date	Turbidity (NTU)	Temperature (°C)	DO (mg/L)	Spec. Cond. (µS/cm)	pH (S.U.)	ORP (mV)
KAFB-106102	Q1 2021	1/14/2021	0.37	17.2	3.17	356.6	7.72	341.8
	Q4 2020	10/15/2020	0.66	18.3	3.89	389.0	7.92	387.5
	Q3 2020	7/15/2020	0.93	20.1	3.25	327	7.78	337.9
	Q2 2020	5/4/2020	1.28	20.7	2.17	328.3	7.79	160.2
KAFB-106S10	Q1 2021	1/15/2021	2.03	17.3	1.82	519.6	7.36	186.1
KAFB-3411	Q4 2020	10/2/2020	1.28	23.9	1.74	364.4	7.71	165.2
	Q2 2020	4/24/2020	1.17	20.0	3.02	365.0	7.87	261.1

Note: Some wells are not sampled in Q1 and Q3 and therefore do not have data reported.

[a] Specific conductance not collected at this location.

°C = degrees Celsius
µS/cm = microSiemens per centimeter
DO = dissolved oxygen
ID = identification
mg/L = milligram per liter
NA = not applicable
mV = millivolt
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
Q1 = first quarter
Q2 = second quarter
Q3 = third quarter
Q4 = fourth quarter
Spec. Cond. = specific conductivity
S.U. = standard unit

Appendix C-4

Groundwater Sample Chain-of-Custody Forms

(January-March 2021)

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-003-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA	2021
			Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
				ANALYSIS REQUIRED (Specify number of bottles)										
1	GW003-211	1-14-21	1038	5	—	3	—	2						

pump: 18078-919

TB211-27

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7794

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-14-21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-004-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW004-211	1-13-21	0850	5	–	3	–	2						

pump: 1807B - 919

TB211- 26

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7820

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Dschmeelk	1-13-21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-005-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW005-211	1-15-21	1325	10	–	3	–	2	1	1*	1	1	1	
2	GW005-611	1-15-21	1325	10	–	3	–	2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

pump: 1807B-902

TB211-28

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7740

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-15-21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-009-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate and Bicarbonate)	COMMENTS
1	GW009-211	1-11-2021	1505	10	–	3	–	2	1	1*	1	1	1	
2	GW009-611	1-11-2021	1505	10	–	3	–	2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 23

SAMPLER(S): D. Schweelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7886

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schweelk	1-11-21				
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-012R-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate and Bicarbonate)	COMMENTS
1	GW012R-211	1-11-2021	1225	24	–	9	–	6	3	3*	1	1	1	Please see Comments for requested MS/MSD analyses

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB211-22

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7809

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-11-21	1830	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-029-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188		

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW029-211	01/05/2021	1015	2			AR	2						
	AR													

TB211- 07

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7945

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Rosebrough	01/05/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-030-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW030-211	01/05/2021	1000	2			AR	2						

TB211- 07

SAMPLER(S): A. Rosebrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7945

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/05/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-031-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188		

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW031-211	01/05/2021	0945	2			AR	2						
	AR													

TB211- 07

SAMPLER(S): A. Roseborough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7945

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Roseborough	01/05/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-032-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: • Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW032-211	01/06/2021	1040	2			AR	2						
	AR													

TB211-12

SAMPLER(S): A. Roadbrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7541

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Roadbrough	1/6/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-033-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW033-211	01/06/2021	1015	2			#2	2						
MS														

TB211- 12

SAMPLER(S): A. Rosebrough, P. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7511

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-034-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW034-211	01/06/2021	1027	2				2						

TB211- 12

SAMPLER(S): A. Rosebrough, D. Sillmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7511

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Andy Rosebrough	01/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-041-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR: 2021
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188		

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW041-211	01/06/2021	1212	7			AR	2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 13

SAMPLER(S): A. Roxborough, D. Schmidt

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7500

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roxborough	01/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-049-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW049-211	01/06/2021	1110	2			XR	2						
	MS													

TB211- 11

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7522

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/6/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-050-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW050-211	01/06/2021	1615	2				2						
	AR													

TB211- 4

SAMPLER(S): A. Roseborough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7522

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Roseborough	1/6/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-051-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW051-211	01/06/2021	1128	2			AK	2						
	AK													

TB211- 13

SAMPLER(S): A. Roseborough, O. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7500

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Roseborough	01/6/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-097-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW097-211	1-12-21	1410	5	–	3	–	2						

pump: 150 78 -919

TB211-24

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7783

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-12-21	1630			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-098-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW098-211	1-12-21	1230	5	–	3	–	2						

pump: 18078-919

TB211-24

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7783

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-12-21	1630			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
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Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-099-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	Dissolved Fe, Mn (6010C)	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW099-211	1-13-21	1230	5	–	3	–	2						

pump: 180713-919

TB211-25

SAMPLER(S): D. Schweik

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7810

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schweik	1-13-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-100-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW100-211	1-13-21	1055	5	–	3	–	2						

pump: 18078-919

TB211-25

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7810

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-13-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-101-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111 | LAB PO NUMBER: 21295 | LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW101-211	1-13-21	1420	5	–	3	–	2						
2	GW101-611	1-13-21	1420	5	–	3	–	2						

pump: 18078 – 919

TB211- 26

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7820

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-13-21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-102-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW102-211	1-14-21	0835	5	-	3	-	2						

Pump 18078-919

TB211-27

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7794

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-14-21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-149-484-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW149-484-211	1-7-2021	1340	7				2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 17

SAMPLER(S): A. Rosebrough, P. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7831

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-151-484-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW151-484-211	1-8-2021	1145	7			MS	2	1	1*	1	1	1	
MS														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211-20

SAMPLER(S): A. Roseborough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7864

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1/8/2021	1420			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-152-484-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW152-484-211	1-8-2021	1045	7			HK	2	1	1*	1	1	1	
AA														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 21

SAMPLER(S): A. Rosebrough, A. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7875

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1-8-2021	1430			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-153-484-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW153-484-211	1-7-2021	1300	7			AK	2	1	1*	1	1	1	
AK														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 17

SAMPLER(S): A. Rosebrough, O. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 9161 4700 7831

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-201-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)										
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW201-211	01/06/2021	0940	2			AR	2						
	AR													

TB211- 10

SAMPLER(S): A. Roseborough, D. Schinelli

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7533

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-202-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW202-211	01/06/21	0925	2			~~AR~~	2						
	AR													

TB211- 10

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7533

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
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Tel No: (410) 584-7000
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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-203-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(6011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW203-211	01/06/2021	0915	2			AC	2						
MS														

TB211- 10

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7533

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/06/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-204-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW204-211	01/04/2020	1250	2				2						
2	GW204-611	01/04/2020	1250	2				2						
AR														

TB211- 02

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7978

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
~~AR Rosebrough~~					
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-205-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW205-211	01/04/2020	1226	2			2	2						
~~2~~	~~GW205-611~~	~~01/04/2020~~	~~1230~~	~~2~~				~~2~~						
				4										
AA														

TB211- 02

SAMPLER(S): D. Schneelk, A. Rosebrough	COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7979	

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1-4-2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-206-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188		

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW206-211	01/05/2021	1125	2			AR	2						

TB211- 09

SAMPLER(S): A. Rosebrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7901

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/05/21	1650			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-207-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW207-211	01/04/2021	1127	2				2						
	AK													

TB211-01

SAMPLER(S): A. Rosebrough, D. Schmaltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7967

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Rosebrough	1-4-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-208-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
				ANALYSIS REQUIRED (Specify number of bottles)										
1	GW208-211	1-4-2021	1140	2				2						

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7967

TB211- 01

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-4-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-209-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW209-211	01/04/2021	1157	2				2						

TB211-01

SAMPLER(S): A. Roseborough, O. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7967

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1-4-2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-216-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW216-211	1-4-2021	1010	2		X		2						
		X												

TB211- 02

SAMPLER(S): D. Schmeelk, A. Roseborough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7978

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-217-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW217-211	01/04/2021	0953	2				2						
AR														

TB211- 04

SAMPLER(S): D. Schmeltz, A. Roseborough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7912

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-218-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW218-211	1-4-2021	0935	2		X		2						X
2	GW218-611	1-4-2021	0935	2		X		2						
			X											

TB211- 04

SAMPLER(S): D. Schaeffer A. Rosebrough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7912

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-222-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW222-211	01/04/2021	1105	2				2						
	MR													

TB211- 05

SAMPLER(S): D. Schmeelk, A. Kosebrough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7989

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Kosebrough	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-223-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW223-211	01/04/2021	1040	2				2						
	AR													

TB211- 0.3

SAMPLER(S): O. Schmeltz, A. Rosebrough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7989

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-224-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW224-211	01/04/2021	1028	2				2						

TB211- 03

SAMPLER(S): D. Schmaelle, A. Roseborough

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7989

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Roseborough	1/4/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-230-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW230-211	01/06/2021	1242	7			AR	2	1	1*	1	1	1	
	AR													

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 13

SAMPLER(S): A. Roseborough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 9161 4700 7500

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy J Roseborough	01/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-231-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW231-211	01/05/2021	1100	2			AR	2						

TB211- 08

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7956

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Andy Rosebrough	01/05/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-232-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW232-211	01/05/2021	1047	2			AR	2						
		AR												

TB211-08

SAMPLER(S): A. Rosebrough, D. Schmaelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7956

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-438-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188		

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW235-438-211	01/05/2021	1243	2				2						
	AR													

TB211- 05

SAMPLER(S): A. Roseborough, D. Schmeilk

COURIER AND SHIPPING NUMBER: FedEx 6161 4700 7923

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-472-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW235-472-211	01/05/2021	1300	6			~~HR~~	6					AR	Please see Comments for requested MS/MSD analyses
														AR

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB211- 0.5

SAMPLER(S): A. Rosebrough, N. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7923

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-235-501-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW235-501-211	01/05/2021	1315	2			AK	2						

TB211- 05

SAMPLER(S): A. Rosebrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 9923

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy J Rosebrough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-436-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW236-436-211	01/05/2021	1145	2			AR	2						AR
2	GW236-436-611	01/05/2021	1145	2			AR	2						

TB211- 06

SAMPLER(S): A. Rosebrough, P. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7934

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-470-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA	2021
			FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW236-470-211	01/05/2021 AR	1205	2			AR	2						
	AR													

TB211- 06

SAMPLER(S): A. Roseborough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7934

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-236-499-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW236-499-211	01/05/~~2020~~ 2021 AR	1215	2			AR	2						
	AR													

TB211- 06

SAMPLER(S): A. Roseborough, D. Schnuelle

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7934

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	01/05/2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-240-449-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(6011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW240-449-211	01/07/2021	0945	10	AK	3	AK	2	1	1*	1	1	1	
	AK													

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 14

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7485

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-241-428-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW241-428-211	01/06/2021	1310	7			AR	2	1	1*	1	1	1	AR
2	GW241-428-611	01/06/2021	1310	7			AR	2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 11

SAMPLER(S): A. Rosebrough D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 9161 4700 7522

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

EA

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-242-418-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)										
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW242-418-211	01/05/2021	0915	7			MR	2	1	1*	1	1	1	
MR														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 09

SAMPLER(S): A. Rosebrough, O. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7901

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Andrew Rosebrough	01/05/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-243-425-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW243-425-211	1/7/2021	0945	15			AR	6	3	3*	1	1	1	Please see Comments for requested MS/MSD analyses

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB211- 18

SAMPLER(S): A. Roseborough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 9161 4700 7842

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-244-445-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)											
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW244-445-211	1/7/2021	0915	10	AR	3	HR	2	1	1*	1	1	1	
	AR													

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 14

SAMPLER(S): A. Rosebrough, D Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7485

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-245-460-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	**6360401**	**Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601**	Amanda Smith: asmith@eaest.com EA	2021
			FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111		LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW245-460-211	1-7-2021	1030	10	AR	3	AR	2	1	1*	1	1	1	
AR														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 14

SAMPLER(S): A. Rosebrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7495

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-247-450-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW247-450-211	1-7-2021	1130	10	AK	3	AK	2	1	1*	1	1	1	AK
2	GW247-450-611	1-7-2021	1130	10	AK	3	AK	2	1	1*	1	1	1	AK
AK														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 15

SAMPLER(S): A. Rosebrough, D. Schneelle

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7496

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-013-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)										
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GW013-211	1-12-21	0940	5	–	3	–	2						

pump: 15078-919

TB211-24

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7783

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-12-21	1630			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-ER211-01

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	ER211-01	1-11-21	1105	6	—	3	—	2	1					

Please add Fe and Mn to total metal analysis.

Pump Serial Number: 18078-919

Associated with GW012R-211, and GW009-211, and GW009-611

TB211-22

~~TB211-022~~

SAMPLER(S): D. Schweelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7809

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schweelk	1-11-21	1830	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-ER211-02

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA	2021
			FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111		LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8015D) DRO ~~(8260C) BTEX~~	(8015D) GRO ~~(8260C) BTEX~~	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	ER211-02	1-14-21	1415	11	3	2	3	2	1					

Please add Fe and Mn to total metal analysis.

Pump Serial Number: 1807B-902

TB211-29

SAMPLER(S): D. Schweelk ~~F. Messenger~~ dm

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7750

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schweelk	1-15-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S1-447-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS1-447-211	1/7/2021	1425	10	AR	3	AR	2	1	1*	1	1	1	
AR														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 16

SAMPLER(S): A. Roseborough, D. Schmueller

COURIER AND SHIPPING NUMBER: FedEx 0161 4700 7897

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S2-451-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS2-451-211	1-7-2021	1500	24	AK	9	AK	6	3	3*	1	1	1	Please see Comments for requested MS/MSD analyses
														AK

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

Please run MS/MSD on the following analytes only:
VOCs/BTEX/BTEXN, EDB, Total As and Pb, and dissolved Mn and Fe

TB211- 19

SAMPLER(S): A. Rosebrough, O. Schneelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7953

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S3-449-211

PROJECT NAME: Kirtland AFB - GWM & IRM Op Mod	PROJECT NUMBER: 6360401	LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	FAX AND MAIL REPORTS/EDD TO: Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	YEAR: 2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111		LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS3-449-211	1-8-2021	1010	10	AP	3	AP	2	1	1*	1	1	1	
AP														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 21

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7875

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: Amy Rosebrough	1-8-2021	1430	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S4-446-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate and Bicarbonate)	COMMENTS
1	GWS4-446-211	1/7/2021	1100	10	HP	3	HP	2	1	1*	1	1	1	
	AR													

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 15

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7496

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S5-446-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)											
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS5-446-211	1-8-2021	0845	10	~~MK~~	3	~~AR~~	2	1	1*	1	1	1	

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 20

SAMPLER(S): A. Rosebrough, D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7864

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough,	1-8-21	1430			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S7-451-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS7-451-211	1-8-2021	0920	10	HR	3	HR	2	1	1*	1	1	1	
HR														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 20

SAMPLER(S): A. Rosebrough, D. Schmaedlk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7964

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1-8-21	1430			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S8-451-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS8-451-211	1/7/2021	1230	10	AR	3	AR	2	1	1*	1	1	1	AR
~~2~~	~~GWS8-451-611~~	~~1/7/2021~~		~~10~~	~~AR~~	~~3~~	~~AR~~	~~2~~	~~1~~	~~1*~~	~~1~~	~~1~~	~~1~~	
	AR													

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211- 16

SAMPLER(S): A. Rosebrough, D. Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7897

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Rosebrough	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S9-447-211

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	GWS9-447-211	1-8-2021	1115	10	MR	3	PR	2	1	1*	1	1	1	
PR														

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered

TB211-21

SAMPLER(S): A. Roseborough, Dylan Schmeltz

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 ~~7864~~ PR ~~7895~~ PR

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
Amy Roseborough	1-8-2021	1430			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-S10-443-211

PROJECT NAME: ~~Kirtland AFB Bulk Fuels Facility~~ JS GWM & IRM Op Mod

PROJECT NUMBER: 6360401

LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories
2425 New Holland Pike Lancaster PA 17601

FAX AND MAIL REPORTS/EDD TO: ~~Tara Lamond: tlamond@eaest.com EA~~ JS
Amanda Smith: asmith@eaest.com EA
FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA

YEAR: 2021

QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

Lab PO Number: 21295

LAB CONTACT: ~~Kay Hower KayHower@eurofinsUS.com~~ JM Eurofins 1 (717) 556-7258
Darlene Bandy Darlene.Bandy@Eurofinset.com

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	VOCs (8260C)	BTEX (8260C)	BTEXN (8260C)	EDB (8011)	Total (As,Pb,Ca,K,Na,Mg) (6020A/6010C)	Dissolved Fe, Mn (6010C)	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	Alkalinity (Total, Carbonate, and Bicarbonate) (SM2320B)	TPH-GRO (8015C/D)	TPH-DRO (8015C/D)	COMMENTS
	GWS10-211															
1	~~GWS10-443-211~~ JM	1-15-21	0925	15	3	—		2	1	1*	1	1	1	3 JM	2 JM	
2																
3																
4					JM											
5																
6																

COMMENTS: *Dissolved Fe, Mn aliquot was field filtered
associated with ER211-02
pump: 18078-902

TB211-29

SAMPLER(S): D. Schneelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7750

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schneelk	1-15-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-SWB211-01

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111 | LAB PO NUMBER: 21295 | LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	SWB211-01	1-14-21	1301	6	—	3	—	2	1	—				

Please add Fe and Mn to total metal analysis.

Associated with: ~~ESS lab grade water~~ & CK* Crystal Springs DI water

TB211-27

SAMPLER(S): J. Messenger

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7794

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J. Messenger	1-14-21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-SWB211-02

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	SWB211-02	1-14-21	1306	6	—	3	—	2	1	—				

Please add Fe and Mn to total metal analysis.

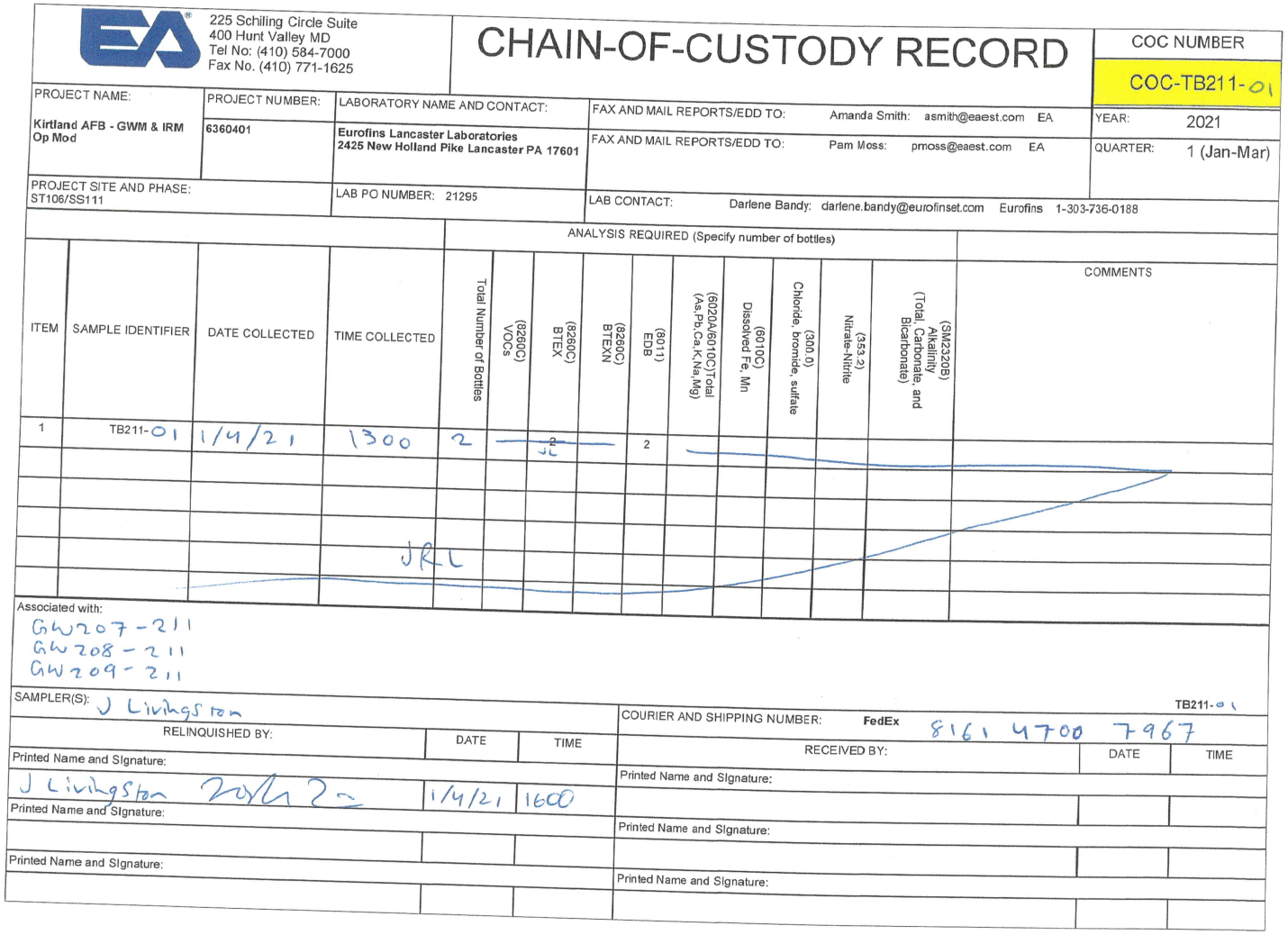
Associated with: ESS lab grade water

TB211-27

SAMPLER(S): J. Messenger

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7794

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J. Messenger	1-14-21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		



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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-01

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA	2021
			FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111		LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-01	1/4/21	1300	2		2 JL		2						

Associated with:
GW207-211
GW208-211
GW209-211

TB211-01

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7967

RELINQUISHED BY:	DATE	TIME
Printed Name and Signature: J Livingston	1/4/21	1600
Printed Name and Signature:		
Printed Name and Signature:		

RECEIVED BY:	DATE	TIME
Printed Name and Signature:		
Printed Name and Signature:		
Printed Name and Signature:		

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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211- 02

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211- 02	1/4/21	1300	2		2		2						
			JRL											

Associated with:
GW204-211 GW204-611
GW205-211
GW216-211

TB211- 02

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7978

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-03

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-03	1/4/21	1300	2		2 JL		2						
		JRL												

Associated with:
GW222-211
GW223-211
GW224-211

TB211-03

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7989

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-04

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-04	1/4/21	1300	2		2 JL		2						
			JRL											

Associated with:
GW217-211
GW218-211
GW218-611

TB211-04

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7912

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/4/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-05

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-05	1-5-2021	1400	2	~~2~~	~~2~~	X	2						

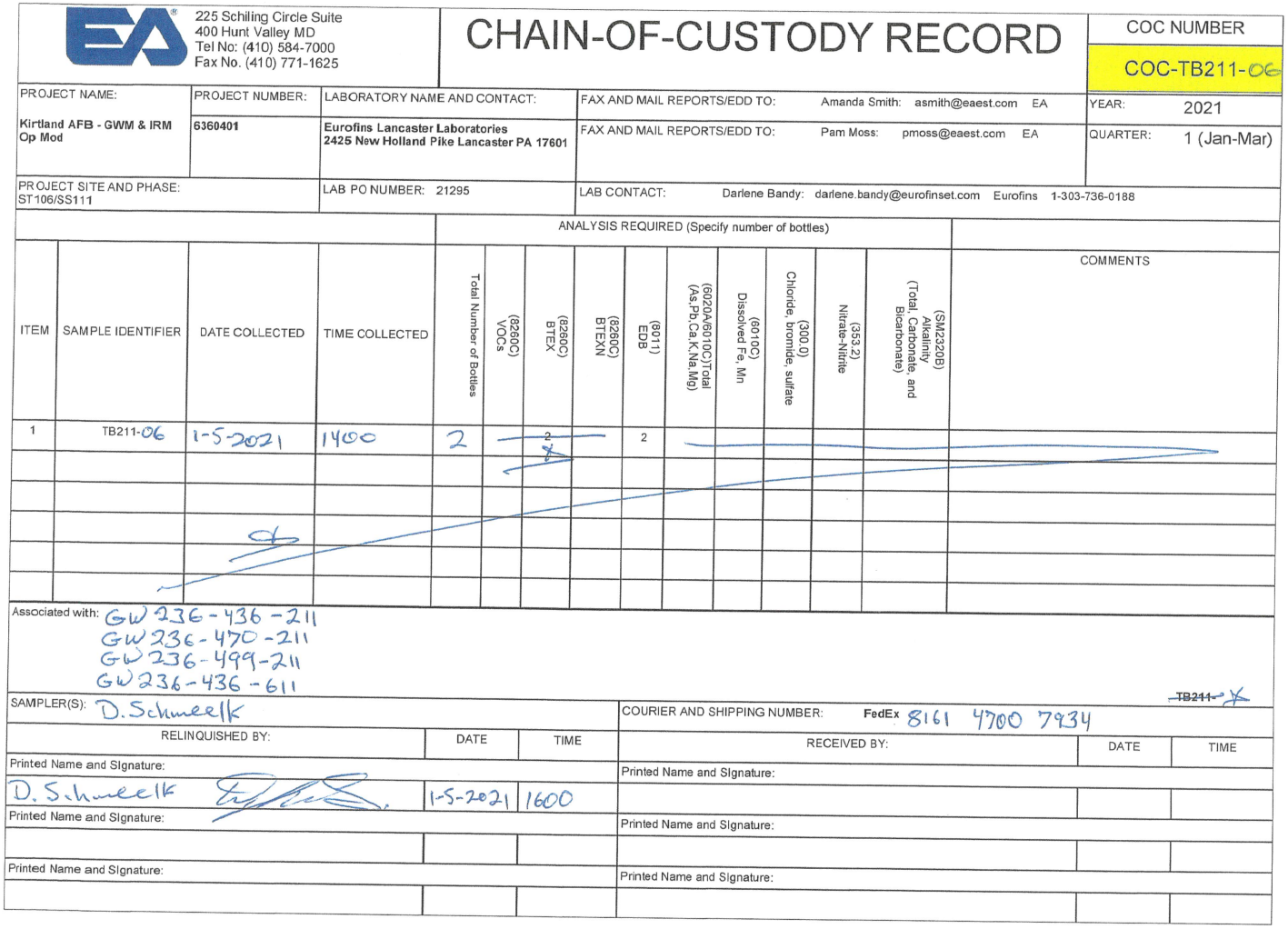
Associated with: GW 235-438-211
GW 235-472-211
GW 235-501-211

~~TB211-~~ X

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7923

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-5-2021	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		



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Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-06

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-06	1-5-2021	1400	2		2		2						

Associated with: GW236-436-211
GW236-470-211
GW236-499-211
GW236-436-611

~~TB211~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7934

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-5-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-07

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

				ANALYSIS REQUIRED (Specify number of bottles)										
ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-07	1-5-2021	1400	2	~~2~~ X			2						

Associated with: GW029-211
GW030-211
GW031-211

~~TB211-~~ X

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7945

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-5-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-08

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-08	1-5-2021	1400	2	~~2~~	X		2						

Associated with: GW231-211
GW232-211

~~TB211~~ X

SAMPLER(S): DSchweik

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 ~~7923~~ X 7956

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schweik	1-5-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-09

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111	LAB PO NUMBER: 21295		LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-09	1-5-2021	1400	2		2		2						

Associated with: GW212-418-211
GW206-211

TB211-

SAMPLER(S): D. Schmeelk			COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7901		
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-5-2021	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

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400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-10

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate and Bicarbonate)	COMMENTS
1	TB211-10	1/6/21	1200	2		2 JL		2						
			JRL											

Associated with:
GW201-211
GW202-211
GW203-211

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7533

~~TB211-10~~ X

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: J Livingston	1/6/21	1600	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211- 11

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211- 11	1/6/21	1200	2		~~2~~ JL		2						
			JRL											

Associated with:
GW 241-428-211
GW 241-428-611
GW 049-211
GW 050-211

~~TB211-11~~ X

SAMPLER(S): J Livingston
COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7522

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211- 12

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211- 12	1/6/21	1200	2		~~2~~ 12		2						
			JRL											

Associated with:
GW032-211
GW033-211
GW034-211

~~TB211- 12~~ X

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7511

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-13

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-13	1/6/21	1200	2		~~2~~ JL		2						
		JRL												

Associated with:
GW230-211
GW041-211
GW051-211

TB211-~~13~~ X

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7500

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/6/21	1600			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-14

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-14	1/7/21	1100	4	—	2	—	2						
		JRL												

Associated with:
GW 240-449-211
GW 244-445-211
GW 245-460-211

~~TB211-14~~ JR

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7485

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-15

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-15	1/7/21	1100	4	—	2	—	2						
			JRL											

Associated with:
GW 54-446 - 211
GW 247-450 - 211
GW 247-450 - 611

~~TB211-15~~ AR

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7496

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-16

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-16	1/7/21	1100	4	–	2	–	2						
			JRL											

Associated with:
GW 58-451-211
~~GW 58-451-611~~
GW 51-447-211

~~TB211-16~~

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7897

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-17

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-17	1/7/21	1100	2	-	~~2~~	-	2						
		JRL												

Associated with:
GW 149-484-211
GW 153-484-211
~~GW 53-484-211~~

~~TB211-17~~

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7831

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211- 18

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211- 18	1/7/21	1100	2		2 JL		2						
		JRL												

Associated with:

GW243-425-211

TB211- 18 JR

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7842

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211- 19

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE:	LAB PO NUMBER:	LAB CONTACT:
ST106/SS111	21295	Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	Dissolved Fe, Mn (6010C)	Chloride, bromide, sulfate (300.0)	Nitrate-Nitrite (353.2)	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211- 19	1/7/21	1100	4	—	2	—	2						
		JRL												

Associated with:
GWS2-451-211

~~TB211- 19~~ PR

SAMPLER(S): J Livingston

COURIER AND SHIPPING NUMBER: FedEx 8181 4700 7853

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
J Livingston	1/7/21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-20

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-20	1-8-2021	1245	4	—	2	—	2						

Associated with: GWS5-446-211
GWS7-451-211
GW151-484-211

~~TB211-~~ X

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7864

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-8-2021	1430	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-21

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-21	1-8-2021	1245	4	—	2	—	2	—					

Associated with: GW152-484-211
GWS3-449-211
GWS9-447-211

~~TB211-~~ X

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7875

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-8-2021	1530	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-22

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-22	1-11-2021	1700	4	—	2	—	2						

Associated with: GW012R-21I
~~GWER211-01~~

~~TB211-~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7809

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-11-21	1830	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-23

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C) Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-23	1-11-21	1700	4	—	2	—	2						

Associated with: GW009-211
GW009-611

~~TB211~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7886

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-11-21		Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-24

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111
LAB PO NUMBER: 21295
LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-24	~~1541~~ 1-12-21	1541	4	–	2	–	2						

Associated with: GW013-211
GW097-211
GW098-211

~~TB211~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 816147007783

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-12-21	1630	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-25

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-25	1-13-2021	1400	4	—	2	—	2						

Associated with: GW099-21
GW100-21

~~TB211~~

SAMPLER(S): D. Schweelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7810

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schweelk	1-13-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-26

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-26	1-13-2021	1400	4	—	2	—	2	—	—	—	—	—	

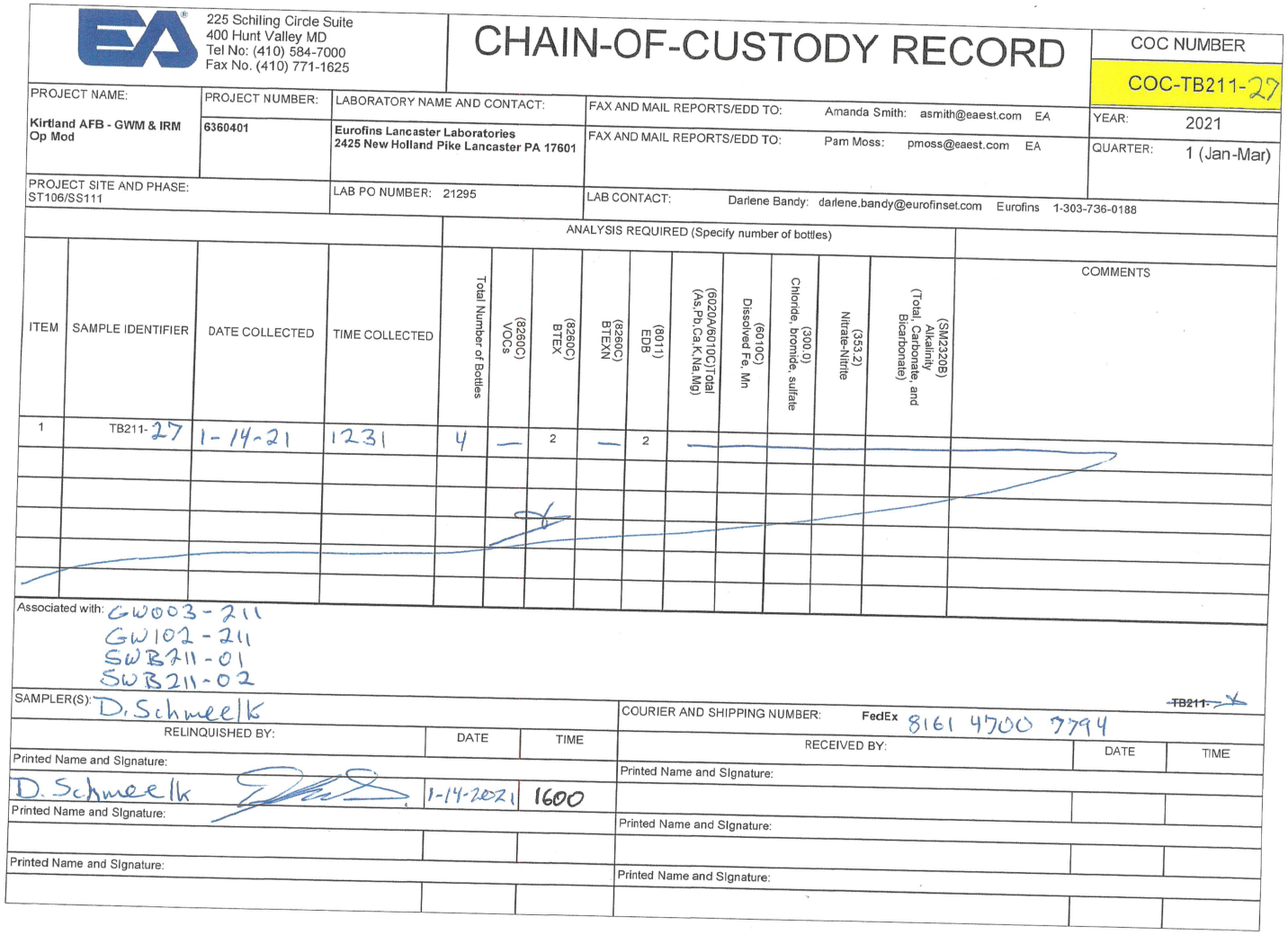
Associated with: GW004-211
GW101-211
GW101-611

~~TB211-~~ X

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7820

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-13-202	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		



225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-27

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-27	1-14-21	1231	4	—	2	—	2						

Associated with: GW003-211
GW102-211
SWB211-01
SWB211-02

~~TB211-~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7794

RELINQUISHED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-14-2021	1600
Printed Name and Signature:		
Printed Name and Signature:		

RECEIVED BY:	DATE	TIME
Printed Name and Signature:		
Printed Name and Signature:		
Printed Name and Signature:		

225 Schilling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-28

PROJECT NAME:	PROJECT NUMBER:	LABORATORY NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:	YEAR:
Kirtland AFB - GWM & IRM Op Mod	6360401	Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	Amanda Smith: asmith@eaest.com EA Pam Moss: pmoss@eaest.com EA	2021 QUARTER: 1 (Jan-Mar)

PROJECT SITE AND PHASE: ST106/SS111

LAB PO NUMBER: 21295

LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	(8260C) BTEX	(8260C) BTEXN	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-28	1-15-2021	1515	4	—	2	—	2						

Associated with: GW005-211
GW005-611

TB211 ✓

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7740

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
D. Schmeelk	1-15-21	1700			
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

225 Schiling Circle Suite
400 Hunt Valley MD
Tel No: (410) 584-7000
Fax No. (410) 771-1625

CHAIN-OF-CUSTODY RECORD

COC NUMBER: COC-TB211-29

PROJECT NAME: Kirtland AFB - GWM & IRM Op Mod	PROJECT NUMBER: 6360401	LABORATORY NAME AND CONTACT: Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster PA 17601	FAX AND MAIL REPORTS/EDD TO: Amanda Smith: asmith@eaest.com EA FAX AND MAIL REPORTS/EDD TO: Pam Moss: pmoss@eaest.com EA	YEAR: 2021 QUARTER: 1 (Jan-Mar)
PROJECT SITE AND PHASE: ST106/SS111		LAB PO NUMBER: 21295	LAB CONTACT: Darlene Bandy: darlene.bandy@eurofinset.com Eurofins 1-303-736-0188	

ANALYSIS REQUIRED (Specify number of bottles)

ITEM	SAMPLE IDENTIFIER	DATE COLLECTED	TIME COLLECTED	Total Number of Bottles	(8260C) VOCs	TPH-GRO (8015C/D) (8260C) BTEX	TPH-DRO (8015C/D) (8260C) BTEX	(8011) EDB	(6020A/6010C)Total (As,Pb,Ca,K,Na,Mg)	(6010C) Dissolved Fe, Mn	(300.0) Chloride, bromide, sulfate	(353.2) Nitrate-Nitrite	(SM2320B) Alkalinity (Total, Carbonate, and Bicarbonate)	COMMENTS
1	TB211-29	1-15-2021	1515	8	3	3	2	2						

~~Associated with:~~ Associated with; ~~GWS10-443-211-Dm~~ GWS10-211
ER 211-02

~~TB211-~~

SAMPLER(S): D. Schmeelk

COURIER AND SHIPPING NUMBER: FedEx 8161 4700 7750

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Printed Name and Signature: D. Schmeelk	1-15-21	1700	Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		
Printed Name and Signature:			Printed Name and Signature:		

APTIM

9919

CHAIN OF CUSTODY

Reference Document # 501397-GW-012

GW Sampling - APTIM Lawrenceville

Project Manager: Kathleen Romalia

Send Report To: Susan Huang
Phone Number: 925-288-2099
Address: 4005 Port Chicago Hwy
City: Concord, CA 94520
susan.huang@aptim.com

Sampler's Name(s): C. LaChance

Project Number: 501397
Project Name / Location: KAFB ROS
Purchase Order #: NA
Shipment Date: 1/13/21
UPS Number: 1Zd6V690 0194237362

Lab Destination: APTIM - Lawrenceville
MON - FRI Delivery
17 Princess Road
Lawrenceville, NJ 08648
Lab Contact Name: Paul Hedman
Phone #: 609-895-5357

Sample ID Number	Location	Date	Time	Method	Matrix	# of containers	Preservative	Requested Analyses: VFA (EPA 300m) None	Reduced Gases (RSKSOP-175/EPA 3810) HCl			
							Container	2 x 40 mL VOAs	2 x 40 mL VOAs			
106064-LTM-011121	KAFB-106064	1/11/21	0945	G	GW	3	—	X	X			1
106064-LTM-011121-FD	"	1/11/21	0945	G	GW	2	—	X	X			2
106063-LTM-011121	KAFB-106063	1/11/21	1041	G	GW	3	—	X	X			3
106MW2I-LTM-011121	KAFB-106MW2-I	1/11/21	1145	G	GW	3	—	X	X			4
106EX2-LTM-011121	KAFB-106EX2	1/11/21	1410	G	GW	3	—	X	X			5
106MW1I-LTM-011221	KAFB-106MW1-I	1/12/21	1035	G	GW	3	—	X	X			6
106EX1-LTM-011221	KAFB-106EX1	1/12/21	1055	G	GW	4	—	X	X			7
106MW1S-LTM-011221	KAFB-106MW1-S	1/12/21	1358	G	GW	4	—	X	X			8
106IN1-LTM-011221	KAFB-106IN1	1/12/21	1340	G	GW	4	—	X	X			9
106MW2S-LTM-011321	KAFB-106MW2-S	1/13/21	1030	G	GW	4	—	X	X			10

Turnaround Time: Standard ☐ 24-hr ☐ 48-hr
All Methods ☐ 3-day

Level Of QC Required: I II III IV

Project Specific:

Relinquished By: [signature] Date: 1/13/21 Time: 1700
Received By: Date: 1/14/21 Time: 1100

Relinquished By: Date: Time:
Received By: Date: Time:

Appendix C-5

U.S. Geological Survey Sentinel Well Data

(January-March 2021)

United States Department of the Interior

U. S. GEOLOGICAL SURVEY
New Mexico Water Science Center
Albuquerque, New Mexico 87110

MEMORANDUM FOR RECORD

May 10, 2021

Attention: Bryan Banks, AFCEC

Through: Kimberly Beisner, Water Quality Specialist, NMWSC
Stuart Norton, Supervisory Hydrologist, NMWSC

From: Kate Wilkins, Hydrologic Technician, NMWSC

Subject: Quarterly Organic Data and Groundwater Level Measurement Transmittal for Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) Ethylene Dibromide (EDB) Plume Sentinel Wells for the January 2021 to March 2021 Quarter.

The USGS installed sentinel wells downgradient of the KAFB BFF EDB plume and upgradient from community water-supply wells, as a means of providing advanced warning of water quality in the vicinity of community water-supply wells. Samples are collected from the sentinel wells on a quarterly basis in accordance with the USGS fundamental science practices. This memorandum provides a summary of organic data results and the groundwater level measurements for the USGS KAFB BFF EDB plume Sentinel Wells (Figure 1, Table 1). Laboratory analytical results for the quarter from January 2021 through March 2021 are presented in Table 2 and discrete groundwater level measurements are presented in Table 3.

Site Descriptions

All the sentinel well sites (Figure 1, Table 1) are located in urban areas. The Trumbull well nest is located in a parking lot at the intersection of Trumbull Avenue SE and Mesilla Street SE. The surrounding neighborhood has a high volume of vehicle traffic. The Cesar Chavez well nest is located behind the Cesar E. Chavez Community Center, and the site is separated from vehicle traffic. The Southern well nest is located east of Phil Chacon Park, and the site is generally separated from vehicle traffic. The VA well nest is located next to Randolph Road SE, which has a high volume of vehicle traffic.

Sampling Period

Samplers were deployed between October 19, 2020, and October 22, 2020. Environmental samples were collected between February 1, 2021, and February 5, 2021.

Sampling Protocols

Samples were collected using dual membrane diffusion samplers following USGS sampling protocols outlined in the National Field Manual for the collection of water-quality data (U.S. Geological Survey, variously dated). The quality assurance samples collected include a source solution blank, trip blank, field blanks, equipment blank, matrix spike, and replicate.

Sample Analysis

In November 2018, USGS began using the USGS National Water Quality Laboratory (NWQL) for organic compound analyses at the USGS KAFB EDB sentinel wells in order to improve data quality and ensure timely delivery of the data. Organic compound analysis is completed by NWQL using method O-4127-96 (Connor and others, 1998). Effective October 1, 2019, laboratory reporting thresholds were modified to reflect detection limits of EPA Method SW8260C and EPA Method SW8011. The method is approved to be in conformance with the National Environmental Laboratory Accreditation Program (NELAP).

Data Review

The data presented herein have been reviewed and approved by USGS staff, as outlined in the work plan (Travis, 2017). Organic data results are reported in Table 2. No detections were found in the environmental samples. Groundwater level measurements are presented in Table 3. The data reviewed within this memorandum were in accordance with the quality assurance requirements outlined in the work plan.

The data are publicly available via NWIS at https://waterdata.usgs.gov/nwis/. If you have any questions regarding the data, please feel free to contact me at 505-830-7946 or klwilkins@usgs.gov.

Sincerely,

KATE WILKINS

Digitally signed by KATE WILKINS
Date: 2021.05.10 12:11:42 -06'00'

Kate Wilkins
Project Chief
Hydrologic Technician
USGS New Mexico Water Science Center

cc: Sheen Kottkamp, AFCEC
Kathryn Lynnes, AFCEC
Ben Moayyad, USACE
Bernard Bockisch, EA Engineering
Stuart Norton, USGS
Kimberly Beisner, USGS
Michael Johnson, USGS
Erik Storms, USGS

References:

Connor, B.F., Rose, D.L., Noriega, M.C., Murtagh, L.K., and Abney, S.R., 1998, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of 86 volatile organic compounds in water by gas chromatography/mass spectrometry, including detections less than reporting limits: U.S. Geological Survey Open-File Report 97-829, 78 p.

Travis, R., 2017, Work Plan for The Quarterly Sampling of the Kirtland Air Force Base Bulk Fuels Facility Plume Sentinel Wells. 31 p.

U.S. Environmental Protection Agency, 1992,1,2-Dibromoethane and 1,2-dibromo-3-chloropropane by microextraction and gas chromatography: U.S. Environmental Protection Agency 13 p., accessed August 17, 2020, at https://www.epa.gov/sites/production/files/2015-12/documents/8011.pdf.

U.S. Environmental Protection Agency, 2006,Volatile organic compounds by gas chromatography/mass spectrometry (GC/MS): U.S. Environmental Protection Agency 92 p., accessed August 17, 2020, at https://www.epa.gov/sites/production/files/2018-06/documents/method_8260c_rev_3_8-1-2006.pdf.

U.S. Geological Survey, variously dated, National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chaps. A1-A10, available online at http://pubs.water.usgs.gov/twri9A.

Figure 1: Location of Kirtland Air Force Base Bulk Fuels Facility, USGS sentinel wells, and community water supply wells, Albuquerque and Kirtland Air Force Base, New Mexico.

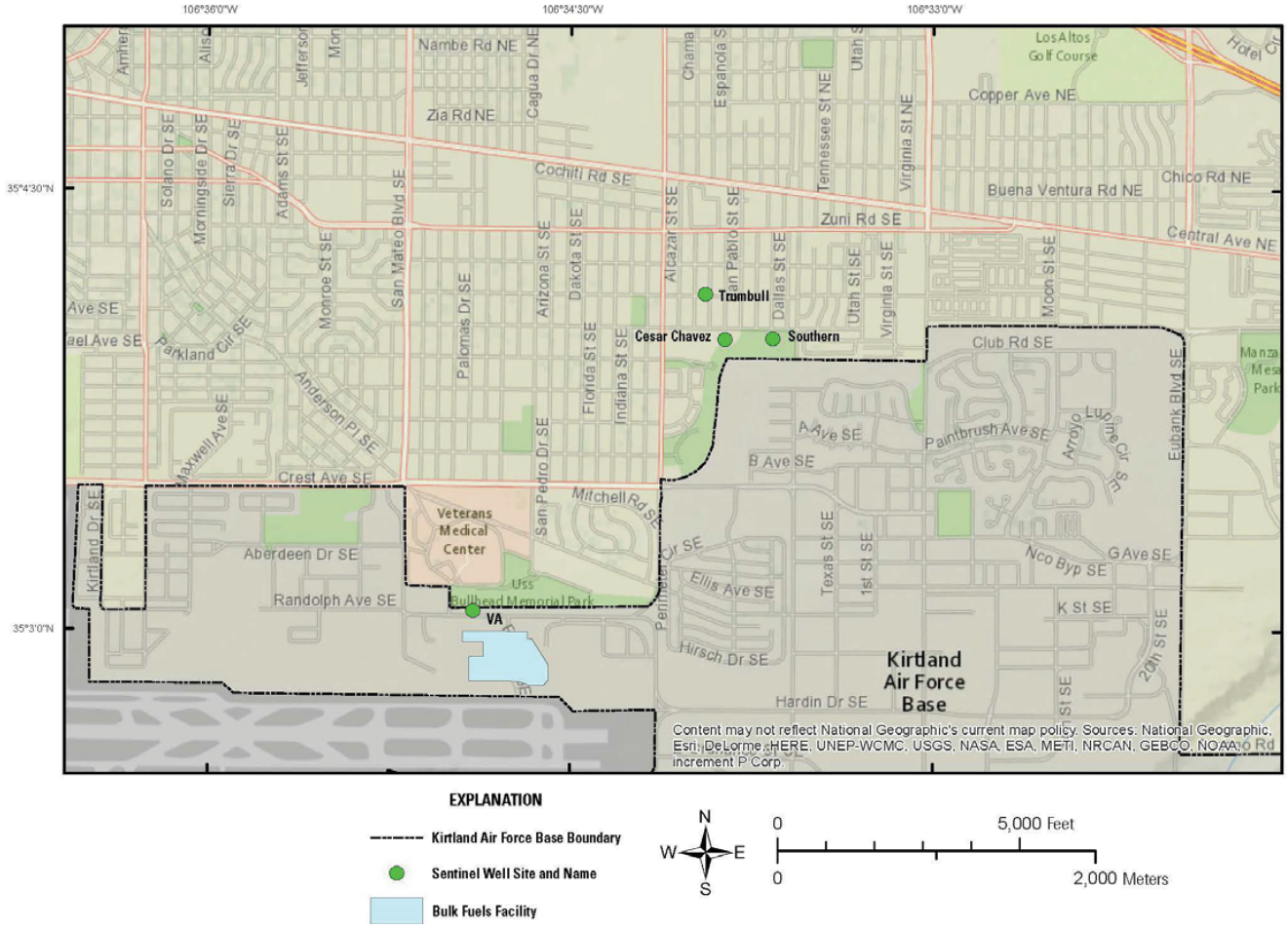


Table 1: Sentinel Well Site Information

Site Identification Number	Station Name	Construction Completion Date	Well Depth (feet below land surface (bls))	Well Diameter (inches)	Screened Interval (feet bls)
Cesar Chavez Sentinel Wells					
350359106335201	10N.04E.30.134A CESAR CHAVEZ SENTINEL WELL 1A	11/20/2014	519	2.5	459 - 509
350359106335202	10N.04E.30.134B CESAR CHAVEZ SENTINEL WELL 1B	10/28/2014	620	2.5	580 - 600
350359106335203	10N.04E.30.134C CESAR CHAVEZ SENTINEL WELL 1C	10/28/2014	1,040	2.5	1,000 - 1,020
350359106335204	10N.04E.30.134D CESAR CHAVEZ SENTINEL WELL 1D	10/28/2014	1,338	2.5	1,298 - 1,318
Southern Sentinel Wells					
350359106333901	10N.04E.30.144A SOUTHERN SENTINEL WELL 1A	12/11/2014	538	2.5	468 - 518
350359106333902	10N.04E.30.144B SOUTHERN SENTINEL WELL 1B	3/22/2015	610	2.5	570 - 590
350359106333903	10N.04E.30.144C SOUTHERN SENTINEL WELL 1C	3/22/2015	1,090	2.5	1,050 - 1,070
350359106333904	10N.04E.30.144D SOUTHERN SENTINEL WELL 1D	3/22/2015	1,400	2.5	1,360 - 1,380
Trumbull Sentinel Wells					
350408106335601	10N.04E.30.1243A TRUMBULL-NEST-1A	4/18/2013	522	2.5	437 - 467; 467 - 517
350408106335602	10N.04E.30.1243B TRUMBULL-NEST-1B	4/18/2013	1,018	2.5	998 - 1,008
350408106335603	10N.04E.30.1243B TRUMBULL-NEST-1C	4/18/2013	1,432	2.5	1,412 - 1,422
VA Sentinel Wells					
350304106345401	10N.03E.36.1433A T10N.R03E.S36.1433A Shallow VA Sentinel Well	4/26/2016	660	3	620 -640
350304106345402	10N.03E.36.1433B T10N.R03E.S36.1433A Middle VA Sentinel Well	4/26/2016	860	3	820 - 840
350304106345403	10N.03E.36.1433C T10N.R03E.S36.1433A Deep VA Sentinel Well	4/26/2016	1,040	3	1,000 - 1,020

Table 2
Groundwater Analytical Results for Sentinel Wells, January - March 2021

					Site Name:	Cesar Chavez 1A			Cesar Chavez 1B			Cesar Chavez 1C			Cesar Chavez 1D		
					Station Identification:	350359106335201			350359106335202			350359106335203			350359106335204		
					Sample Date:	02/02/2021 1300			02/02/2021 1200			02/02/2021 1100			02/02/2021 900		
					Sample Type:	Environmental			Environmental			Environmental			Environmental		
					Sample Depth (ft bgs):	496			591			1002			1303		
					Site Elevation (ft above sea level):	5350.33			5350.23			5350.23			5350.23		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**Project Screening Level[c]**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**
EDB	USGS Method O-4127-96 (µg/L)	1,2-dibromoethane[d]	0.1	0.05	0.05	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014
VOCs		Benzene	10	5	5	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Ethylbenzene	750	700	700	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Naphthalene	30	NS	30	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Toluene	750	1,000	750	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Total Xylenes	620	10,000	620	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8

					Site Name:	Southern 1A			Southern 1B			Southern 1C			Southern 1D		
					Station Identification:	350359106333901			350359106333902			350359106333903			350359106333904		
					Sample Date:	02/03/2021 1300			02/03/2021 1200			02/03/2021 1100			02/03/2021 1000		
					Sample Type:	Environmental			Environmental			Environmental			Environmental		
					Sample Depth (ft bgs):	506			580			1062			1370		
					Site Elevation (ft above sea level):	5363.20			5363.10			5363.10			5363.10		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**Project Screening Level[c]**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**
EDB	USGS Method O-4127-96 (µg/L)	1,2-dibromoethane[d]	0.1	0.05	0.05	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014
VOCs		Benzene	10	5	5	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Ethylbenzene	750	700	700	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Naphthalene	30	NS	30	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Toluene	750	1,000	750	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Total Xylenes	620	10,000	620	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8

					Site Name:	Trumbull 1A			Trumbull 1B			Trumbull 1C		
					Station Identification:	350408106335601			350408106335602			350408106335603		
					Sample Date:	02/01/2021 1300			02/01/2021 1200			02/01/2021 1100		
					Sample Type:	Environmental			Environmental			Environmental		
					Sample Depth (ft bgs):	484			1000			1414		
					Site Elevation (ft above sea level):	5337.76			5337.76			5337.76		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**Project Screening Level[c]**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**
EDB	USGS Method O-4127-96 (µg/L)	1,2-dibromoethane[d]	0.1	0.05	0.05	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014
VOCs		Benzene	10	5	5	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Ethylbenzene	750	700	700	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Naphthalene	30	NS	30	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Toluene	750	1,000	750	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Total Xylenes	620	10,000	620	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8

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Table 2
Groundwater Analytical Results for Sentinel Wells, January - March 2021

					Site Name:	VA Shallow			VA Middle			VA Deep		
					Station Identification:	350304106345401			350304106345402			350304106345403		
					Sample Date:	02/05/2021 1200			02/05/2021 1100			02/05/2021 1000		
					Sample Type:	Environmental			Environmental			Environmental		
					Sample Depth (ft bgs):	622			820			1000		
					Site Elevation (ft above sea level):	5340.668			5340.668			5340.668		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**Project Screening Level[c]**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**	**Result**	**Val Qual**	**MRL**
EDB	USGS Method O-4127-96 (µg/L)	1,2-dibromoethane[d]	0.1	0.05	0.05	<0.028	U	0.014	<0.028	U	0.014	<0.028	U	0.014
VOCs		Benzene	10	5	5	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Ethylbenzene	750	700	700	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Naphthalene	30	NS	30	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Toluene	750	1,000	750	<0.6	U	0.60	<0.6	U	0.60	<0.6	U	0.60
		Total Xylenes	620	10,000	620	<1.8	U	1.8	<1.8	U	1.8	<1.8	U	1.8

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Ground Water of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004).
[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40CFR Part 141, 143 (May 2009).
[c] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL.
[d] 1,2-dibromoethane is reported as a MDL based on NELAP certification. The MDL for 1,2-dibromoethane is 0.014 µg/L.

µg/L = microgram per liter
bgs = below-ground surface
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ft = foot/feet
MCL = maximum contaminant level
MRL = USGS National Water Quality Laboratory Method Reporting Level
MDL = USGS National Water Quality Laboratory Method Detection Limit
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
Val Qual = validation qualifier
VOC = volatile organic compound

Results:
< = less than the limit of quantification (numerical result)

Qualifiers:
Val Quals based on criteria set by NWQL.
U = A result that is either not detected or below the Method Detection Level.

References:
New Mexico Administrative Code. 2004. State of New Mexico, Title 20.6.2 Ground and Surface Water Protection.

USGS Sentinel Well Data, Febraury 1-5, 2021

Table 3
Groundwater Measurements for Sentinel Wells, January - March 2021

Site Name	Station Identification	Measuring Date	Water Level (ft below land surface)
Cesar Chavez 1A	350359106335201	2/2/2021	476.40
Cesar Chavez 1B	350359106335202	2/2/2021	476.44
Cesar Chavez 1C	350359106335203	2/2/2021	469.45
Cesar Chavez 1D	350359106335204	2/2/2021	457.97
Southern 1A	350359106333901	2/3/2021	489.82
Southern 1B	350359106333902	2/3/2021	489.64
Southern 1C	350359106333903	2/3/2021	483.28
Southern 1D	350359106333904	2/3/2021	470.83
Southern 1F	350359106333906	2/3/2021	489.67
Southern 1H	350359106333908	2/3/2021	483.20
Trumbull 1A	350408106335601	2/1/2021	463.34
Trumbull 1B	350408106335602	2/1/2021	456.36
Trumbull 1C	350408106335603	2/1/2021	444.99
VA Shallow	350304106345401	2/5/2021	463.30
VA Middle	350304106345402	2/5/2021	458.30
VA Deep	350304106345403	2/5/2021	457.39

USGS Sentinel Well Data, Febraury 1-5, 2021

APPENDIX C-6

DESCRIPTIONS FROM PREVIOUS REPORTS

LIST OF ACRONYMS AND ABBREVIATIONS

%	percent
µg/L	microgram(s) per liter
AFB	Air Force Base
amsl	above mean sea level
BFF	Bulk Fuels Facility
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DMS	dual-membrane sampler
DO	dissolved oxygen
EDB	ethylene dibromide
GWM	groundwater monitoring
GWTS	groundwater treatment system
mg/L	milligram(s) per liter
PSL	project screening limit
Q1	first quarter of the year, January 1 through March 31
Q2	second quarter of the year, April 1 through June 30
Q4	fourth quarter of the year, September 1 through December 31
REI	reference elevation interval
RPD	relative percent different
SE	southeast
VA	Veterans Affairs

C-6-1. EXPLANATION OF REFERENCE ELEVATION INTERVAL DESIGNATIONS

The following text was initially provided in the Fourth Quarter (Q4) 2016 Quarterly and Annual Report (Kirtland Air Force Base [AFB], 2017a):

In previous reports, the distribution of groundwater contamination had been described in terms of shallow, intermediate, and deep intervals within the ethylene dibromide (EDB) plume. These intervals were broadly defined by permeable zones in which EDB migration had been identified, and these intervals have been used to guide the vertical design of monitoring wells. However, with the implementation of the groundwater treatment system (GWTS) interim measure north of Ridgecrest Drive, Southeast (SE), combined with the anticipated continuing water table rebound of approximately 2 feet per year for the next decade, these definitions of shallow, intermediate, and deep become problematic. Not all contamination will move upward with the rising water table; therefore, the base of the deep zone is expected to remain somewhat fixed. In addition, as the water table rises, the plume is expected to increase in thickness over time and impact a shallower layer of the aquifer that is not present today. For these reasons, the continued use of shallow, intermediate, and deep nomenclature will be inadequate to accurately describe changing vertical plume concentrations and changes in the plume related to the GWTS operation.

To assess performance of the GWTS, particularly regarding plume capture and plume collapse, several methods of analysis that compare variations in groundwater flow paths and contaminant concentration trends will be employed both horizontally and vertically. Horizontally, visualizing how concentrations vary in map view, from upgradient to downgradient, around Bullhead Park and the Veteran's Affairs (VA) Medical Center, has not changed as these features are fixed. However, in the vertical dimension, shallow, intermediate, and deep are changing with time and are not fixed. Therefore, to fix these layers to accommodate consistent performance analysis in the vertical dimension, and to provide for future addition of new layers (i.e., a shallower zone) as the water table rises, the concept of reference elevation interval (REI) is introduced in this Report. In concept, what were once the deep, intermediate, or shallow zones will now be represented as layers in cake (e.g., with a bottom elevation and a top elevation). Because of the nature of the permeable zones, the bottom and top undulate somewhat rather than being perfectly flat; however, the plume can still be visualized in terms of these layers. As the water table rises, layers can be added to the top. Because these fixed layers are defined, vertical water levels and vertical contaminant concentrations can be compared over time and always to the same references. This will allow meaningful analysis of trends that demonstrate plume capture and collapse with consistent reference points. The three REIs are 4857, 4838, and 4814, corresponding to the historically identified shallow, intermediate, and deep zones, respectively. Table 3-4 includes the REI assignations for the groundwater monitoring (GWM) network.

The association of the former groundwater zones and REIs relative to the depth of well screen intervals within the GWM network is summarized below:

- ***REI 4857*** is currently the uppermost interval so named because the GWM wells comprising this dataset are screened across the elevation of 4,857 feet above mean sea level (amsl). Data collected or measured from these GWM wells are representative of the hydrogeologic conditions of this zone that is bounded on top by the water table surface and bounded on the bottom by a surface that intercepts the bottom of the REI 4857 well screens. The screen elevations for the GWM wells within this dataset range from 4,879 feet amsl down to 4,827 feet amsl, and include all wells formerly categorized as shallow, and two new GWM wells completed in December 2016 (KAFB-106235-463 and KAFB-106236-461). These two new wells were not sampled in Q4 2016. A total of 62 wells comprise this dataset, eight of which are included in both the REI 4857

and REI 4838 datasets: KAFB-106001, KAFB-106015, KAFB-106017, KAFB-106018, KAFB-106019, KAFB-106021, KAFB-106022, and KAFB-106025. The reason for this double assignation is due to well screen construction lengths (25-30 feet) and, thus, overlapping screen intervals in REI 4838 by more than 5 feet. This means that samples collected from these eight wells are representative of REI 4857 and are also representative of at least a third of REI 4838. Of note, a majority of the REI 4857 wells were designed to be water table wells with partially submerged screens, having relatively long screen lengths ranging from 20 to 30 feet. However, due to rising groundwater elevations, only 14 GWM wells included in REI 4857 remained with partially submerged screens as of Q4 2016.

- ***REI 4838*** directly underlies REI 4857 and is so named because all but one of the screens of the GWM wells comprising this dataset are screened across the elevation of 4,838 feet amsl. Data collected or measured from these GWM wells are representative of the hydrogeologic conditions of this zone that is bounded on top by the bottom surface of REI 4857 and bounded on the bottom by a surface that intercepts the mid-point between the REI 4838 screens and the underlying REI 4814 screens. The screen elevations for the GWM wells within this dataset range from 4,848 feet amsl down to 4,800 feet amsl and include all but two of the wells previously categorized as intermediate; the exceptions are GWM wells KAFB-106230 and KAFB-106232, which are now included in the REI 4814 dataset due to the depth of their screens. Eight wells are included in both in REI 4857 and REI 4838 datasets, as discussed above. The REI 4838 GWM well dataset contains one anomalous well assignment (KAFB-106037). This well, having a screened elevation between 4,815 and 4,800 feet amsl, was previously assigned as a deep well. However, it is part of the only clustered well group having four wells (all other have either two or three). Having three REIs meant excluding one well from this system in the capture analyses. KAFB-106037 was chosen over KAFB-106036 because analysis of historical groundwater level measurements from this clustered well group showed that it was in better communication with the nearby interim measure extraction well KAFB-106228. KAFB-106037 was placed in REI 4838 because the deepest well in the clustered well group (KAFB-106212) is screened below extraction well KAFB-106228, which necessitated its inclusion in the underlying REI 4814. A total of 46 GWM wells are included in REI 4838.

- ***REI 4814*** directly underlies REI 4838 and currently represents the lowest elevation dataset. This dataset includes all but one well (KAFB-106037) previously designated as deep, as well as the two previously designated intermediate wells (KAFB-106230 and KAFB-106232), as described above. The screened intervals for GWM wells within this dataset cover a large vertical extent of the aquifer ranging from an elevation of 4,824 feet amsl down to an elevation of 4,720 feet amsl. Not all of the screened intervals overlap, prohibiting the assignment of a reference elevation common to all wells. There are 16 wells with screen elevations ranging from 4,824 to 4,798 feet amsl, while 20 well screens fall within the 4,781- TO 4,753 feet amsl range, and three well screens from 4,740- to 4,720 feet amsl. A reference elevation of 4,814 feet amsl was chosen as an identifier for this interval because it passes through the screens of the uppermost group of wells in the dataset allowing for the addition of a deeper REI if required in the future. Data collected or measured from these GWM wells are representative of the hydrogeologic conditions of this zone that is bounded on top by the bottom surface of REI 4838 and bounded on the bottom by a surface that intercepts the bottom of the REI 4814 well screens. There are 39 GWM wells installed in REI 4814.

C-6-2. DISCUSSION OF FIELD PARAMETERS FROM PASSIVE SAMPLING

The following text was initially provided in the Second Quarter (Q2) 2017 Quarterly Report (Kirtland AFB, 2017b):

Upon initiating the Q2 2017 passive sampling, field parameter measurements were notably skewed from historical measurements. Following the collection of field parameters from 13 GWM well locations with passive samplers, it was apparent that field parameter data collected from the passive samplers were not representative of the groundwater conditions due to the pore diameter of the passive sampling membranes, and continued collection of field parameters from passive samplers was terminated pending discussion with the New Mexico Environment Department. Therefore, field parameters were only collected from wells that utilized low-flow sampling techniques (all located south of Gibson Boulevard SE).

C-6-3. PASSIVE SAMPLER EVALUATION

The following text was initially provided in the Q4 2017 Quarterly and Annual Report (Kirtland AFB, 2018a):

A demonstration was performed in Q4 2017 to assess a proposed transition from collecting grab samples using a low-flow methodology (Bennett pump sampling systems) to a passive sampling technique (i.e., dual-membrane sampler [DMS]). This demonstration consisted of comparing low-flow sample analytical results and passive sample analytical results for EDB; benzene, toluene, ethylbenzene, and total xylenes (BTEX); and inorganic compounds from groundwater samples collected from five source area wells (Figure E-7-1). The results are reported in Table 3-14 and shown on Figure 3-23.

In addition, field parameters were compared between the low-flow purge water using a YSI Pro Plus multiparameter probe with a flow-through cell, and measurements taken *in situ* within the well using an Aqua TROLL® 600 multiparameter sonde deployed within the well screen depth (Table 3-15). If passive sampling is approved for source area wells, reliable field parameter measurements will not be achieved from the DMSs and, therefore, an *in situ* method may be proposed if continued field parameter collection is necessary.

The analytical results from this demonstration are summarized below. In accordance with the work plan (Kirtland AFB, 2017c), the low-flow sample data are used for reporting purposes. The sample results from the DMSs are only used for demonstration purposes, and a relative percent difference (RPD) was calculated for each analyte within each sample (Table 3-14). The approved Quality Assurance Project Plan acceptable RPD for duplicate groundwater samples is 35 percent (%) for analytical results and was, therefore, used herein to determine a comparable threshold value. The RPD acceptance threshold of 35% is relevant when comparing two samples utilizing the same sampling methodology. A comparison of results collected via two different sampling methods, one discrete (DMS) and one indiscrete (Bennett Pump), may result in widely varying RPDs. The 35% threshold has been selected to illustrate that the two methods provide results that are comparable to two samples obtained using the same sampling methodology. Analytical results and RPDs are summarized below:

- EDB was detected in all groundwater samples collected using both low-flow and passive technologies. The RPD for EDB from samples collected from KAFB-106005 was 10%. The EDB concentrations from the other four wells in the demonstration ranged from 0.85 to 5.9 micrograms per liter (µg/L), with RPDs ranging from 48 to 175%; above the acceptable 35% RPD.

- Benzene was detected in all groundwater samples (at concentrations above the project screening limit [PSL] of 5 µg/L) using both low-flow and passive technologies. The RPD for the benzene results was 0% for KAFB-106008 (both methods had a benzene concentration of 2,300 µg/L) and the RPD was relatively low for two other wells (KAFB-106005 and KAFB-106006) at 26 and 31%, respectively. The RPD for benzene from groundwater samples collected from KAFB-106014 and KAFB-106059 was 64 and 121%, respectively; above the acceptable 35% RPD.

- Toluene was detected or estimated in all groundwater samples collected using both low-flow and passive technologies. The RPD for toluene ranged from 16 to 195%, and was below the acceptable 35% RPD in two wells (KAFB-106005 and KAFB-106008).

- Ethylbenzene was detected in all groundwater samples collected using both low-flow and passive technologies. The RPD for ethylbenzene was 0% in KAFB-106006 (both methods had an ethylbenzene concentration of 3 µg/L) and the RPD was relatively low for KAFB-106005 (19%).

The ethylbenzene concentrations from the other three wells in the demonstration ranged from 45 to 470 µg/L, with RPDs ranging from 39 to 164%; above the acceptable 35% RPD.

- Total xylenes were detected all groundwater samples collected using both low-flow and passive technologies, with the exception of the DMS sample from KAFB-106006, precluding the ability to calculate an RPD from that well. The RPD for total xylenes was 17% from KAFB-106005, within the 35% RPD. The RPD was above 35% in the remaining wells (KAFB-106008, KAFB-106014, and KAFB-106059).

It should be noted that while some RPD values for EDB and benzene exceeded the 35% threshold, no significant differences in analyte concentrations were observed between either sampling method or the respective analyte PSL. Both methods yielded comparable results that were either both below or above the PSL. The only exception to this was the EDB results from well KAFB-106006. At this well, the low-flow sampling method resulted in an estimated value below the PSL (0.014 µg/L) while the passive sampling method resulted in a value above the PSL (0.21 µg/L). When comparing plume maps utilizing either the passive sampling data or the low-flow sampling data, only minimal shifts of some internal isocontours occur between the two sample types (Figure 3-23); however, the overall contoured boundary (specified as the PSL concentration) generally remained unchanged.

- Inorganic concentrations observed in the groundwater samples collected using the two methods were generally in agreement, with only a few samples that exceeded the 35% RPD, as follows:
  - Dissolved manganese in KAFB-106005 (40% RPD) and KAFB-106014 (46% RPD)
  - Nitrate/nitrite nitrogen in KAFB-106005 (156% RPD) and KAFB-106006 (40% RPD)
  - Dissolved iron in KAFB-106006 (44% RPD)
  - Chloride in KAFB-106014 (80% RPD).

The results from the field parameter demonstration are summarized below. In accordance with the work plan (Kirtland AFB, 2017c), the low-flow purge water data are used for reporting purposes as measured using the YSI Pro Plus. The field parameters from the Aqua TROLL® 600 multiparameter sonde are used for demonstration purposes only, and an RPD was calculated for each parameter within each well (Table 3-15). An RPD of 50% was deemed acceptable for the field parameters, and is conservative given the variability and relatively low concentrations of dissolved oxygen (DO) and turbidity. In accordance with the work plan (Kirtland AFB, 2017c), field parameters were collected until stabilization of three consecutive readings within 10% of one another was achieved, or a maximum of 1 hour. The final, stabilized field parameters measurements are used for reporting and demonstration purposes.

- Turbidity had relatively high RPDs, with the exception of KAFB-106014 at 20%; the remaining four wells had an RPD for turbidity ranging from 60 to 198%.

- Temperature was consistent between the two methods, with a maximum RPD of 12% (KAFB-106008).

- DO had relatively high RPDs in three wells (KAFB-106005, KAFB-106006, and KAFB-106008). DO had relatively low RPDs in KAFB-106014 (46%) and KAFB-106059 (28%). Although DO had relatively high RPDs in three of the demonstration wells, the results were all <1 milligram per liter (mg/L), with the exception of the low-flow result from KAFB-106006 (2.94 mg/L).

- Specific conductivity was consistent between the two methods, with a maximum RPD of 43% (KAFB-106005).

- pH was consistent between the two methods, with a maximum RPD of 7% (KAFB-106059).

- Oxidation-reduction potential had relatively high RPDs in wells KAFB-106005 and KAFB-106059 at 55 and 54%, respectively. The other wells demonstrated relatively low RPDs for oxidation reduction potential, ranging from 5 to 29%.

These results indicate that passive sampling techniques (i.e., DMSs) generally provide results that are comparable to low-flow techniques for inorganic parameters. For volatile parameters, including EDB and BTEX, the results indicate good agreement between the two methods for relatively lower concentrations (e.g., KAFB-106005 and KAFB-106006); however, the higher concentrations of EDB and BTEX did not provide as comparable results between the two methods (e.g., KAFB-106008, KAFB-106014, and KAFB-106059). Plume delineation in the source area at the PSL for both EDB and benzene was comparable between both methods. Significant differences in concentration contours were only observed at concentrations exceeding the PSL by approximately three orders of magnitude (Figure 3-23). The only exception to the plume boundary was for the EDB PSL contour extending further south around KAFB-106006 due to the higher passive sampler concentration.

Previous demonstrations have shown generally comparable results between the two methods, with no consistent bias identified (i.e., neither method has consistently resulted in higher or lower concentrations). Furthermore, vertical profiles were evaluated in Q4 2016 and first quarter (Q1) 2017 (Kirtland AFB, 2017d) that demonstrated most source area wells that were evaluated did not have significant vertical gradients and, therefore, matching the passive sample depths to the low-flow sample depth, as was done for this demonstration, should not result in a significant sample bias. The two field parameter methods (low-flow purge water versus *in situ* measurements) resulted in agreement between the methods, with turbidity being the parameter with the greatest discrepancies. Temperature, pH, and specific conductivity all revealed consistent measurements between the two methods. Although DO resulted in RPDs greater than 50% in three wells, all results were <1 mg/L, with the exception of the low-flow result from KAFB-106006 (2.94 mg/L).

C-6-4. REGIONAL GROUNDWATER GRADIENT

The following text was initially provided in the Q2 2018 Quarterly Report (Kirtland AFB, 2018b):

The GWM well network for the Kirtland AFB Bulk Fuels Facility (BFF) jet fuel dissolved-phase contamination is screened near the top of the saturated interval of the Santa Fe Group aquifer system. Historically, this aquifer system was the sole water supply for the Albuquerque metropolitan area and the groundwater flow was from north-northeast to south-southwest toward the Rio Grande (Bexfield and Anderholm, 2000). As the population increased, water demand also increased and the Santa Fe aquifer system experienced significant stress resulting in water level declines in excess of 100 feet near Kirtland AFB (Powell and McKean, 2014). Furthermore, the groundwater flow changed direction from south-southwest (toward the Rio Grande) to an easterly and northeasterly direction, away from the Rio Grande and toward the city and its drinking water supply wells (Powell and McKean, 2014). It is important to note the predominant groundwater flow direction, which the dissolved-phase constituents migrated along, was north-northeast. To reduce the use of groundwater while maintaining municipal water supply, in 2008, the Albuquerque Bernalillo County Water Utility Authority began diverting water from the San Juan-Chama Drinking Water Project. As a result, this surface water diversion has relieved the pumping stress of the Santa Fe aquifer system and groundwater levels have been rebounding approximately 3-4 feet per year, with rates varying depending upon the proximity to pumping wellfields or historical groundwater sinks (Beman, 2013). A more detailed discussion of the conceptual site model can be found in Section 7 of the RFI Report (Kirtland AFB, 2018c).

C-6-5. DESCRIPTION OF FORMER WELL DESIGNATIONS AND ASSOCIATED SAMPLING REGIMES

The following text was initially provided in the Q4 2018 Quarterly and Annual Report (Kirtland AFB, 2019):

In previous reports, GWM wells were assigned designations based either on their location related to the groundwater gradient and their spatial relationship to the dissolved-phase EDB or simply on their location (i.e., source area, etc.). However, due to the changing regional groundwater gradient (Section 3), these designations may no longer be appropriate or meaningful. In order to present analytical data and data summaries conveniently at the project scale, all GWM wells will hereafter be designated simply as "groundwater monitoring well," except for newly added wells (which includes any newly installed wells), and the presentation of analytical data will be centered on analytes as opposed to former well designation. The former well designations and monitoring well objective are provided in Table 3-1 along with the current sampling regime by quarter. A brief description of the former well designations and the frequency of samples collected by designation is provided below.

Newly Added Wells—Newly added wells include both existing wells that are added to the GWM network as well as newly installed wells that have not completed four quarters of baseline sampling. Newly added GWM wells require a minimum of four consecutive quarters of baseline full-suite analytical sampling before receiving a designation that determines the long-term sampling regime. These wells have been added to define the plume boundary and provide additional water table monitoring due to the rising groundwater elevation.

Source Area Wells—Primarily located in the BFF south of Randolph Road SE and proximal to the spill site on-Base. Sampled during Q2 and Q4. These wells monitor the higher concentrations of dissolved-phase contaminants on-Base.

Downgradient Proximal Wells—Located north of Ridgecrest Drive SE surrounding the historical low concentration dissolved-phase EDB to the west, north, and east into the distal portion of the GWM network. Analytical data for these wells have been historically below the maximum contaminant level for EDB. Sampled every quarter. These wells assist in plume boundary definition.

Veterans Affairs (VA) Proximal Wells—Three sets of nested wells located between the historical dissolved-phase EDB south of Ridgecrest Drive SE and the Raymond G. Murphy VA Medical Center as a means to detect any potential contaminant migration toward the VA medical campus. Sampled every quarter. These wells provide additional wellhead protection monitoring for the VA supply well.

Signal Wells—Three wells located along the south side of Ridgecrest Drive SE to monitor BTEX and provide early indication if theses dissolved-phase constituents are migrating from the source area into the interim measure Target Capture Zone. Sampled during Q2 and Q4.

GWM Wells—Primarily located north of Ridgecrest Drive SE within the historical footprint of the dissolved-phase EDB. Analytical data from these wells serve to define the volume and mass of the dissolved-phase EDB throughout the GWM network. Sampled in Q2 and Q4.

C-6-6. REFERENCES

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Kirtland AFB. 2018a. *Quarterly Monitoring Report October-December 2017 and Annual Report for 2017, Bulk Fuels Facility, SWMU ST-106/SS-111.* Prepared by EA Engineering, Science, and Technology, Inc., PBC for Kirtland AFB under USACE–Albuquerque District Contract No. W912DR-12-D-0006. March.

Kirtland AFB. 2018b. *Quarterly Monitoring Report April-June 2018, Bulk Fuels Facility, SWMU ST-106/SS-111.* Prepared by EA Engineering, Science, and Technology, Inc., PBC for Kirtland AFB under USACE–Albuquerque District Contract No. W912DR-12-D-0006. September.

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FIGURES

List of Appendix C-6 Figures

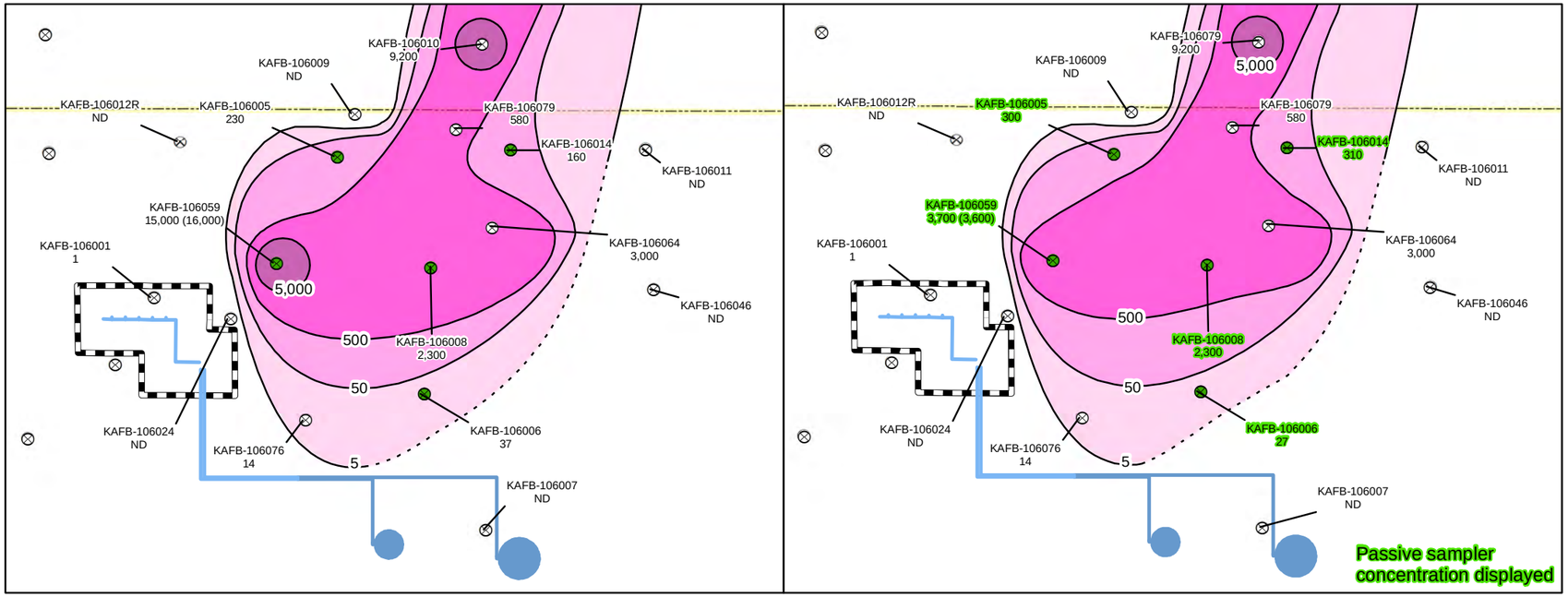
- Q4 2017 Figure 3-23 – Source Area Well Comparison between Low Flow Samples and Passive Samplers in REI 4857, Q4 2017
- Q4 2017 Figure I-7-1 – Source Area Well Comparison Locations, Q4 2017

Q4 2017

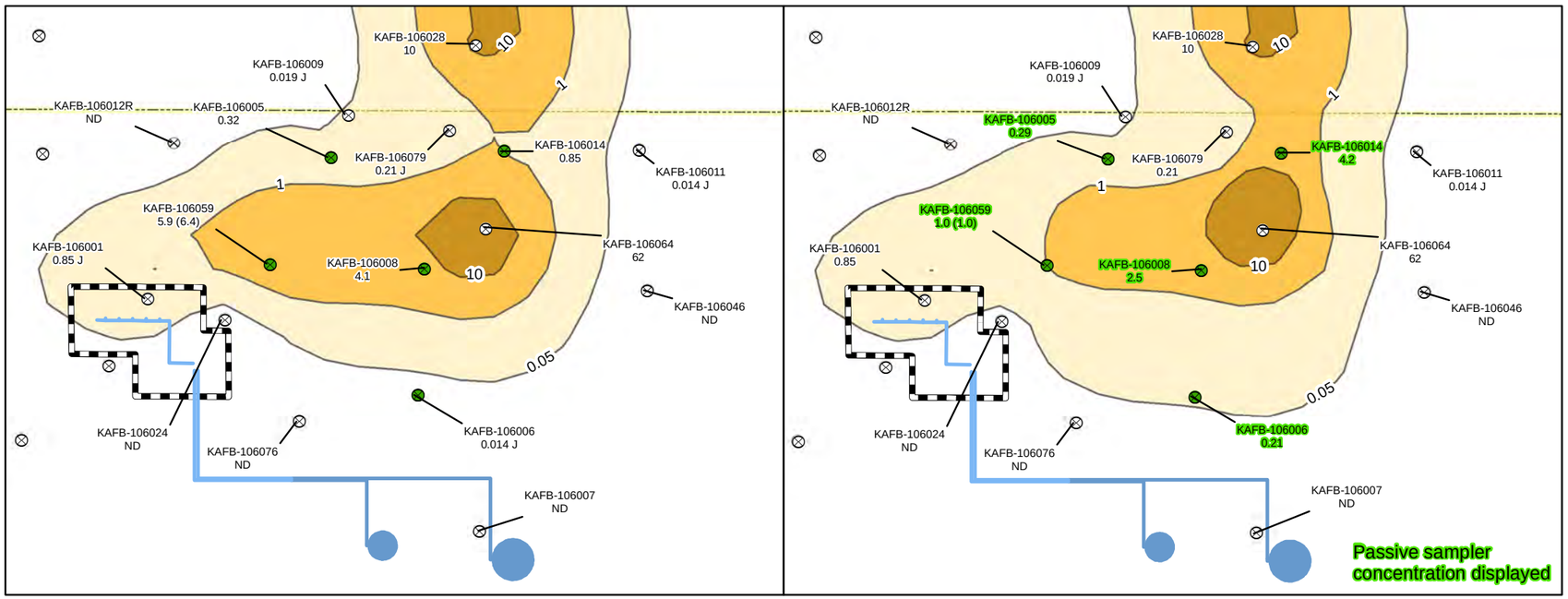
Low Flow Grab Samples

Passive Samples

Benzene



EDB



Legend

- Groundwater Monitoring Well
- Groundwater Monitoring Well used in Source Area Comparison Study
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Former Aboveground Storage Tank
- Source Area

Benzene Concentration Range

- 5.0 (EPA MCL) - 50 µg/L
- 50 - 500 µg/L
- 500 - 5,000 µg/L
- 5,000 - 15,000 µg/L

EDB Concentration Range

- 0.05 (EPA MCL) - 1.0 µg/L
- 1.0 - 10 µg/L
- 10 - 50 µg/L

Notes:
Monitoring wells used in comparison study:
KAFB-106005, KAFB-106006, KAFB-106008,
KAFB-106014, and KAFB-106059.
EDB plume based on model generated with
C-Tech MVS Premier Version 9.94.
Values in parentheses are duplicate sample results.
All units are measured in µg/L.
µg/L = micrograms per liter
EDB = ethylene dibromide
ND = nondetect
Q4 = quarter 4
Qualifer(s):
J = denotes the analyte was positively identified,
but the associated numerical value is estimated.

N

0 200 400 800

Feet

1 inch = 400 feet

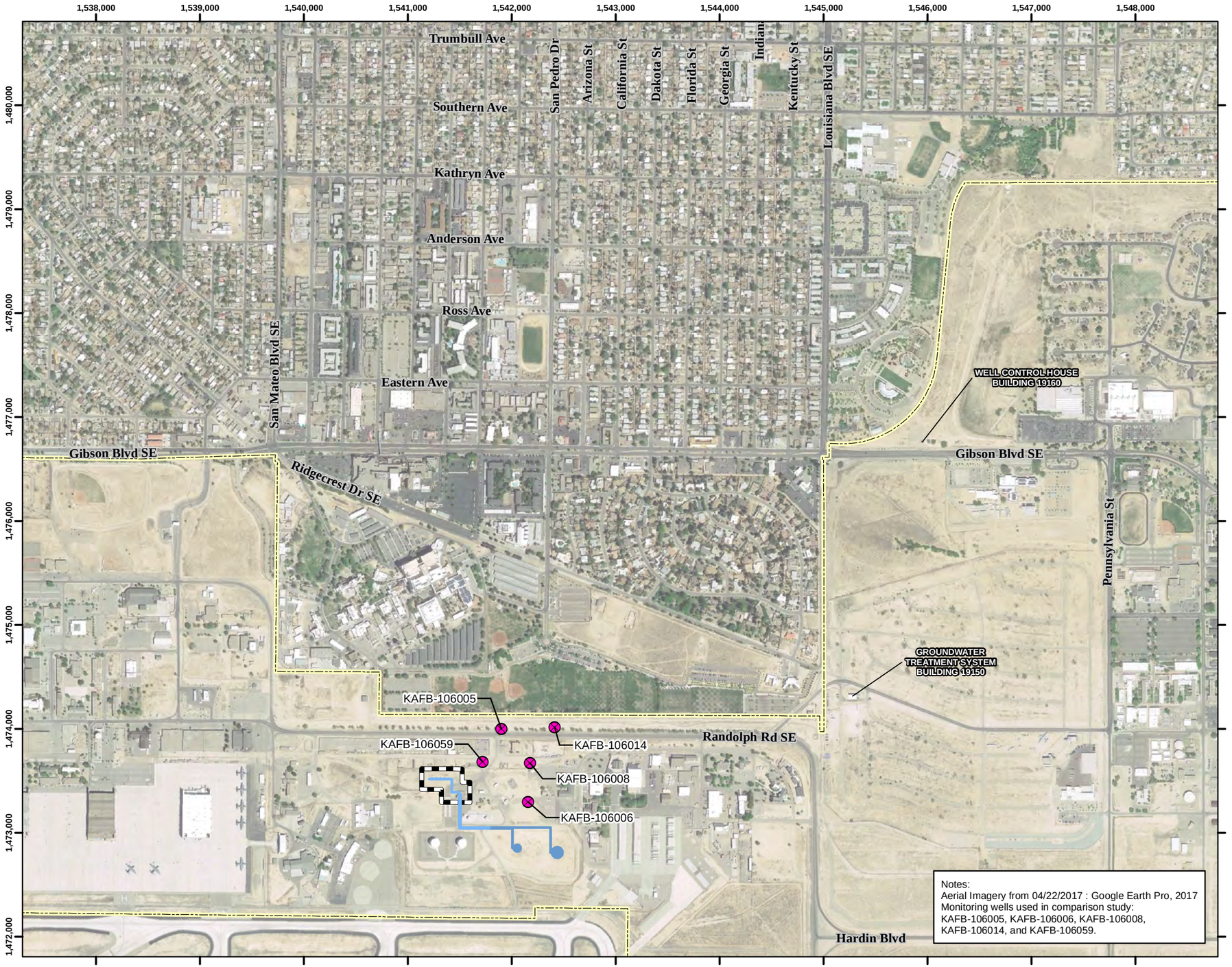
Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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SOLID WASTE MANAGEMENT UNIT ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-23

SOURCE AREA WELL COMPARISON
BETWEEN LOW FLOW SAMPLES AND
PASSIVE SAMPLERS IN REI 4857, Q4 2017

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q4\Section 3\3-23 EDB Benzene Comparison Q4 2017.mxd 2/28/2018 EA sbusby

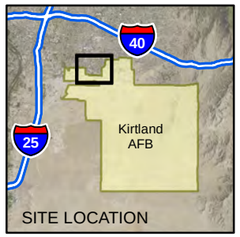


Notes:
Aerial Imagery from 04/22/2017 : Google Earth Pro, 2017
Monitoring wells used in comparison study:
KAFB-106005, KAFB-106006, KAFB-106008,
KAFB-106014, and KAFB-106059.

P:\gis\Projects\Kirtland\Figures\BFF Quarterly Report\2017_Q4\Comparison Study\E-7-1 Source Area Comparison Wells Q4 2017.mxd 2/21/2018 EA sbusby

Legend

- Groundwater Monitoring Well used in Source Area Comparison Study
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Boundary
- Source Area



N

0 500 1,000 2,000
Feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

QUARTERLY AND ANNUAL REPORT
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FIGURE E-7-1

SOURCE AREA WELL COMPARISON LOCATIONS, Q4 2017

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- Q4 2017 Table 3-14 – Comparison of Analytical Results between Bennett Pumps and Passive Samplers in Source Area Wells, Q4 2017
- Q4 2017 Table 3-15 – Comparison of Analytical Results between YSI and Aqua-Troll Parameter Readings for Source Area Wells, Q4 2017
- Q4 2018 Table 3-1 – Groundwater Monitoring Program

Table 3-4
Groundwater Monitoring Wells Included in Q4 2016 Monitoring Activities

Well Location ID	Reference Elevation Interval (ft AMSL)	Installation Date	Date Sampled	Screen Interval[a] (ft bgs)	Screen Interval[a] (AMSL)	Dedicated Sampling System (Yes/No)?	Screen Submerged (Yes/No)?	Estimated Pump Intake Depth (ft bags)[b]	Analytical Suite[c]
Groundwater Monitoring Wells									
KAFB-3411	4857	11/10/1999	11/16/2016	461-504	4879-4836	No	Yes	505.31	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106001	4857/4838	11/10/2000	11/10/2016	483-508	4859-4834	No	Yes	487.83	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106002	4857	3/26/2002	10/20/2016	479-504	4861-4836	Yes	Yes	503.99	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106007	4857	11/14/2007	10/31/2016	484-509	4860-4835	Yes	Yes	504.07	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106015	4857/4838	10/14/2008	10/25/2016	485-510	4855-4830	No	Yes	490.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106016	4857	10/17/2008	10/24/2016	475-500	4864-4839	Yes	Yes	494.73	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106019	4857/4838	12/9/2008	11/7/2016	493-518	4859-4834	No	Yes	497.95	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106020	4857	12/19/2008	10/25/2016	482-507	4859-4834	No	Yes	484.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106021	4857/4838	6/7/2009	10/5/2016	458-483	4856-4831	No	Yes	460.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106022	4857/4838	6/12/2009	10/13/2016	462-487	4856-4831	Yes	Yes	483.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106023	4857	6/27/2009	11/10/2016	473-498	4856-4831	No	Yes	475.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106024	4857	8/3/2009	11/2/2016	481-506	4862-4837	Yes	Yes	502.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106025	4857/4838	12/5/2010	10/5/2016	465-490	4852-4827	No	Yes	467.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106027	4857	5/1/2010	10/24/2016	481-501	4864-4844	Yes	Yes	490.59	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106035	4857	8/9/2011	10/27/2016	452-482	4869-4839	No	No	474.35	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106036	4838	8/5/2011	10/27/2016	481-496	4841-4826	No	Yes	483.80	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106037	4838	7/14/2011	11/8/2016	507-522	4815-4800	No	Yes	509.21	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106039	4838	7/26/2011	10/27/2016	508-523	4840-4825	No	Yes	513.50	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106040	4814	7/19/2011	10/29/2016	530-545	4817-4802	No	Yes	536.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106042	4857	5/31/2011	11/10/2016	469-484	4855-4840	No	Yes	471.06	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106043	4814	5/18/2011	10/10/2016	543-558	4781-4766	Yes	Yes	550.60	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106044	4838	1/7/2011	10/24/2016	504-519	4842-4827	Yes	Yes	511.70[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106045	4814	1/17/2011	11/14/2016	528-543	4817-4802	No	Yes	535.80[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106046	4857	4/8/2011	10/31/2016	490-510	4863-4843	Yes	Yes	504.95	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106047	4838	4/8/2011	10/31/2016	512-527	4841-4826	Yes	Yes	519.55	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106048	4814	4/8/2011	11/15/2016	535-550	4818-4803	No	Yes	537.50	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106052	4857	7/25/2011	10/12/2016	449-479	4870-4840	Yes	Yes	472.28	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106053	4838	7/11/2011	10/12/2016	478-493	4841-4826	Yes	Yes	486.10	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106054	4814	6/28/2011	10/12/2016	504-519	4814-4799	Yes	Yes	511.60	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106055	4857	6/24/2011	10/12/2016	465-485	4860-4840	Yes	Yes	479.90	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106057	4838	6/19/2011	10/12/2016	484-499	4841-4826	Yes	Yes	493.05	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106058	4814	6/14/2011	10/13/2016	511-526	4815-4800	Yes	Yes	518.07	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106070	4857	5/23/2011	10/17/2016	460-485	4858-4833	Yes	Yes	474.85	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106071	4814	5/13/2011	10/18/2016	548-563	4773-4758	Yes	Yes	555.43	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106072	4838	5/1/2011	11/3/2016	475-495	4844-4824	No	Yes	477.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106073	4838	5/5/2011	11/14/2016	499-514	4841-4826	No	Yes	501.74	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106074	4814	4/28/2011	11/14/2016	569-584	4772-4757	No	Yes	571.56	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106075	4857	4/17/2011	10/19/2016	480-500	4860-4840	Yes	Yes	494.90	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106082	4857	4/5/2011	11/1/2016	472-492	4863-4843	No	Yes	474.10	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106083	4838	4/15/2011	11/7/2016	495-510	4840-4825	No	Yes	497.62	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106084	4814	4/5/2011	11/1/2016	566-581	4768-4753	No	Yes	571.50	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106085	4857	7/8/2011	10/17/2016	446-476	4871-4841	Yes	No	468.96	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106086	4838	6/26/2011	11/8/2016	476-491	4842-4827	No	Yes	478.03	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106087	4814	6/19/2011	11/8/2016	546-561	4771-4756	No	Yes	548.01	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106088	4857	6/3/2011	10/17/2016	460-480	4864-4844	Yes	Yes	475.06	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106089	4838	5/23/2011	10/15/2016	481-496	4843-4828	Yes	Yes	488.99	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106090	4814	5/23/2011	10/18/2016	555-570	4768-4753	Yes	Yes	562.41	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106091[e]	4857	6/4/2011	10/13/2016 / 12/15/16	454-474	4860-4840	Yes	Yes	468.98	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106092	4838	5/24/2011	10/17/2016	474-489	4840-4825	Yes	Yes	480.35	VOCs, EDB, metals, anions, alkalinity, FP

Table 3-4
Groundwater Monitoring Wells Included in Q4 2016 Monitoring Activities

Well Location ID	Reference Elevation Interval (ft AMSL)	Installation Date	Date Sampled	Screen Interval[a] (ft bgs)	Screen Interval[a] (AMSL)	Dedicated Sampling System (Yes/No)?	Screen Submerged (Yes/No)?	Estimated Pump Intake Depth (ft bags)[b]	Analytical Suite[c]
KAFB-106093	4814	5/24/2011	10/13/2016	544-559	4770-4755	Yes	Yes	550.38	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106094	4857	6/26/2011	10/20/2016	484-504	4861-4841	Yes	Yes	499.11	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106095	4838	6/24/2011	10/19/2016	504-519	4841-4826	Yes	Yes	511.03	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106096	4814	6/7/2011	10/20/2016	576-591	4769-4754	Yes	Yes	583.75	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106103	4838	6/21/2011	10/18/2016	485-500	4844-4829	Yes	Yes	492.46	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106104	4814	6/15/2011	10/18/2016	510-525	4818-4803	Yes	Yes	517.41	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106105	4838	8/19/2011	11/2/2016	484-499	4838-4823	No	Yes	486.06	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106106	4857	8/10/2011	10/11/2016	454-484	4868-4838	Yes	Yes	476.17	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106107	4814	8/30/2011	11/10/2016	510-525	4812-4797	No	Yes	512.27	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106212	4814	2/17/2015	10/31/2016	543-558	4779-4764	No	Yes	453.97	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106213	4857	2/10/2015	10/13/2016	448-478	4877-4847	Yes	No	475.30	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106214	4838	3/9/2015	10/17/2016	478-493	4848-4833	Yes	Yes	490.08	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106215	4814	4/28/2015	11/7/2016	547-562	4779-4764	No	Yes	549.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106219	4857	3/12/2015	10/6/2016	463-493	4877-4847	Yes	No	475.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106220	4838	3/12/2015	10/6/2016	493-508	4847-4832	Yes	Yes	490.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106221	4814	6/5/2015	10/6/2016	561-576	4779-4764	Yes	Yes	554.40	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106225	4857	1/19/2015	10/11/2016	450-480	4876-4846	Yes	No	474.70	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106226	4838	2/3/2015	11/8/2016	480-495	4847-4832	No	Yes	482.14	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106227	4814	5/6/2015	10/11/2016	548-563	4780-4765	Yes	Yes	554.00	VOCs, EDB, metals, anions, alkalinity, FP
Downgradient Proximal Wells									
KAFB-106029	4857	6/4/2011	10/4/2016	451-471	4860-4840	No	Yes	465.35	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106030	4838	5/25/2011	10/4/2016	469-484	4842-4827	Yes	Yes	476.97	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106031	4814	5/25/2011	10/4/2016	496-510	4815-4801	Yes	Yes	502.49	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106032	4857	6/24/2011	10/26/2016	456-476	4862-4842	No	Yes	470.74	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106033	4838	6/24/2011	10/26/2016	477-492	4841-4826	No	Yes	480.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106034	4814	6/24/2011	10/26/2016	502-517	4817-4802	Yes	Yes	509.33	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106049	4857	5/13/2011	10/11/2016	457-477	4859-4839	No	Yes	471.50	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106050	4838	5/2/2011	10/11/2016	474-489	4842-4827	Yes	Yes	482.57	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106051	4814	4/26/2011	10/11/2016	500-515	4816-4801	Yes	Yes	508.87	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106201	4857	10/4/2012	10/10/2016	487-517	4868-4838	No	Yes	502.00[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106202	4838	9/23/2012	10/10/2016	517-532	4838-4823	Yes	Yes	521.77	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106203	4814	9/9/2012	10/10/2016	620-635	4735-4720	Yes	Yes	627.50[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106204	4857	8/29/2012	10/10/2016	462-492	4871-4841	No	No	477.55[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106205	4838	8/21/2012	10/10/2016	492-507	4841-4826	Yes	Yes	500.00[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106206	4814	8/9/2012	10/10/2016	593-608	4741-4726	Yes	Yes	600.85[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106207	4857	8/22/2012	10/25/2016	473-503	4872-4842	No	No	488.00[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106208	4838	8/16/2012	10/10/2016	503-518	4841-4826	No	Yes	510.50[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106209	4814	8/7/2012	10/25/2016	603-617	4741-4727	No	Yes	610.00[d]	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106216	4857	2/10/2015	10/13/2016	455-485	4879-4849	Yes	No	475.08	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106217	4838	2/17/2015	11/7/2016	485-500	4849-4834	No	Yes	487.06	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106218	4814	5/26/2015	10/13/2016	552-567	4781-4766	Yes	Yes	554.58	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106222	4857	1/15/2015	10/12/2016	458-488	4875-4845	Yes	No	475.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106223	4838	2/17/2015	10/12/2016	488-503	4846-4831	Yes	Yes	489.50	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106224	4814	5/15/2015	10/12/2016	555-570	4780-4765	Yes	Yes	554.58	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106231	4857	9/8/2015	10/3/2016	440-475	4887-4852	Yes	No	470.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106232	4814	9/1/2015	10/3/2016	503-518	4824-4809	No	Yes	503.00	VOCs, EDB, metals, anions, alkalinity, FP
Veterans Affairs Proximal Wells									
KAFB-106003	4857	1/25/2003	10/24/2016	476-501	4861-4836	No	Yes	501.70	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106004	4857	1/4/2006	11/15/2016	484-509	4859-4834	No	Yes	488.77	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106013	4857	9/19/2008	11/9/2016	486-511	4862-4837	No	Yes	491.72	VOCs, EDB, metals, anions, alkalinity, FP

Table 3-4
Groundwater Monitoring Wells Included in Q4 2016 Monitoring Activities

Well Location ID	Reference Elevation Interval (ft AMSL)	Installation Date	Date Sampled	Screen Interval[a] (ft bgs)	Screen Interval[a] (AMSL)	Dedicated Sampling System (Yes/No)?	Screen Submerged (Yes/No)?	Estimated Pump Intake Depth (ft bags)[b]	Analytical Suite[c]
KAFB-106097	4838	4/27/2011	11/9/2016	506-521	4842-4827	No	Yes	508.14	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106098	4814	4/17/2011	11/9/2016	531-546	4817-4802	No	Yes	533.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106099	4838	5/12/2011	11/2/2016	501-516	4842-4827	No	Yes	503.11	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106100	4814	5/3/2011	10/19/2016	526-541	4817-4802	No	Yes	533.47	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106101	4838	2/21/2011	10/24/2016	496-511	4841-4826	No	Yes	503.22	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106102	4814	3/3/2011	11/1/2016	521-534	4816-4803	No	Yes	526.00	VOCs, EDB, metals, anions, alkalinity, FP
Source Area Wells									
KAFB-106005	4857	1/22/2007	11/15/2016	479-504	4865-4840	No	Yes	484.04	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106006	4857	10/31/2007	11/8/2016	483-508	4866-4841	No	Yes	484.60	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106008	4857	11/21/2007	11/17/2016	486-511	4863-4838	No	Yes	491.10	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106009	4857	11/28/2007	11/3/2016	480-505	4865-4840	No	Yes	485.70	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106010	4857	12/6/2007	11/16/2016	483-508	4860-4835	No	Yes	485.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106011	4857	9/23/2008	10/24/2016	486-511	4864-4839	Yes	Yes	505.83	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106012R	4857	4/23/2014	11/8/2016	465-495	4877-4847	No	No	495.52	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106014	4857	10/3/2008	11/16/2016	486-511	4861-4836	No	Yes	491.17	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106028	4857	3/19/2012	10/19/2016	486-510	4863-4839	Yes	Yes	506.80	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106059	4857	4/7/2011	11/14/2016	483-503	4862-4842	No	Yes	488.60	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106060	4838	4/16/2011	10/20/2016	503-518	4842-4827	Yes	Yes	510.29	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106061	4814	4/8/2011	10/20/2016	573-588	4772-4757	Yes	Yes	580.20	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106062	4814	3/19/2011	10/24/2016	575-590	4773-4758	Yes	Yes	582.70	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106063	4838	4/8/2011	11/2/2016	505-520	4844-4829	No	Yes	510.38	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106064	4857	3/24/2011	11/15/2016	485-505	4863-4843	No	Yes	490.18	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106065	4838	5/17/2011	10/19/2016	508-523	4841-4826	Yes	Yes	515.35	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106066	4814	5/16/2011	10/19/2016	575-590	4774-4759	Yes	Yes	583.06	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106067	4857	5/11/2011	10/19/2016	485-505	4863-4843	Yes	Yes	499.99	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106068	4814	5/2/2011	10/17/2016	580-595	4767-4752	Yes	Yes	587.41	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106069	4838	5/1/2011	11/1/2016	506-521	4841-4826	No	Yes	508.08	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106076	4857	4/8/2011	11/21/2016	480-500	4865-4845	No	Yes	482.14	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106077	4838	4/8/2011	11/16/2016	504-519	4841-4826	No	Yes	506.00	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106078	4814	4/8/2011	11/16/2016	573-588	4772-4757	Yes	Yes	581.01	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106079	4857	3/22/2011	10/20/2016	483-503	4864-4844	Yes	Yes	498.78	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106080	4838	4/17/2011	10/20/2016	503-518	4843-4828	Yes	Yes	511.77	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106081	4814	4/16/2011	10/20/2016	574-589	4772-4757	Yes	Yes	582.34	VOCs, EDB, metals, anions, alkalinity, FP
Signal Wells									
KAFB-106017	4857/4838	11/19/2008	10/18/2016	482-507	4857-4832	Yes	Yes	501.56	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106018	4857/4838	11/24/2008	10/18/2016	476-501	4857-4832	Yes	Yes	495.70	VOCs, EDB, metals, anions, alkalinity, FP
KAFB-106038	4857	8/5/2011	11/15/2016	478-508	4870-4840	No	No	509.27	VOCs, EDB, metals, anions, alkalinity, FP

Table 3-4
Groundwater Monitoring Wells Included in Q4 2016 Monitoring Activities

[a] Screen interval is rounded to the nearest foot.
[b] Portable equipment sampling depths are estimated to the nearest half foot due to slight inaccuracies with the mechanism measuring the pump setting in the field
[c] The analytical methods for EDB and VOCs are 8011 and 8260C, respectively. Metals analyses consisted of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium by analytical method 6020A/6010C and select and dissolved metals (iron and manganese) (6010C). Anions analysis consisted of ammonia by method 4500NH3B/C, bromide by method 300.0A, chloride by method 300.0A, nitrate/nitrite nitrogen by method 353.2, sulfate by method 300.0A, and sulfide by method 4500 S2CF. FP include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.
[d] Pump setting estimated as half-way between top and bottom of screen.
[e] Due to fuel contamination at the location of well at KAFB-106091, the well was resampled for EDB, benzene, ethylbenzene, toluene, and total xylenes on December 15, 2016
AMSL = above mean sea level
bgs = below ground surface
EDB = ethylene dibromide
FP = field parameter
ft = foot/feet
ID = identification
Q = quarter
VOC = volatile organic compound

Table 3-14
Comparison of Analytical Results between Bennett Pumps and Passive Samplers in Source Area Wells, Q4 2017

		Well Location ID:		KAFB-106005			KAFB-106006			KAFB-106008		
		Sample Date:		10/23/2017	10/18/2017		10/19/2017			10/20/2017		
		Field Sample ID:		GW005-174	GW005-174D		GW006-174	GW006-174D		GW008-174	GW008-174D	
		Sample Collection Method:		Bennett Pump	DMS[a]		Bennett Pump	DMS[a]		Bennett Pump	DMS[a]	
Parameter	Analytical Method	Analyte	Project Screening Level[d]	Result[b]	Result[b]	Relative Percent Difference[c]	Result[b]	Result[b]	Relative Percent Difference[c]	Result[b]	Result[b]	Relative Percent Difference[c]
EDB	Method SW8011 (µg/L)	1,2-dibromoethane	0.05	0.32	0.29	10	0.014 J	0.21	175	4.1	2.5	48
VOCs	Method SW8260C (µg/L)	Benzene	5	230	300	26	37	27	31	2300	2300	0
		Ethylbenzene	700	29	35	19	3	3	0	120	190	45
		Toluene	750	4	3	29	7	0.6 J	168	1700	2000	16
		Xylenes, Total	620	63	75	17	2	< 1 U	NA	310	490	45
Total Metals	Method SW6010C (mg/L)	Calcium	NS	250	243	3	35.2	35.0	1	121	138	13
		Iron, dissolved	1.0	0.164 J	0.189 J	14	0.390 J	0.610	44	3.58	3.55 J	1
		Magnesium	NS	39.7	38.5	3	5.46	5.51	1	20.0	22.5	12
		Manganese, dissolved	0.2	0.136	0.0905	40	0.702	0.798	13	5.80	6.80	16
		Potassium	NS	5.42	5.22	4	2.08	2.01	3	3.31	3.54	7
		Sodium	NS	80.9	77.8	4	22.5	22.1	2	34.8	36.7	5
	Method SW6020A (mg/L)	Arsenic	0.01	< 0.0020 U	< 0.0020 U	NA	0.0010 J	< 0.0020 U	NA	0.00080 J	< 0.0020 U	NA
		Lead	0.015	0.00015 J	< 0.00025 U	NA	< 0.00025 U	< 0.00025 U	NA	< 0.00025 U	0.00030 J	NA
Anions	Method E300.0 (mg/L)	Bromide	NS	3.8	3.5	8	< 2.5 U	< 2.5 U	NA	1.9 J	2.0 J	5
		Chloride	250	211 J	217	3	9.7	9.3	4	16.0	16.8	5
		Sulfate	250	480	529	10	33.8	33.7	0	3.0 J	2.6 J	14
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[e]	0.50 J	0.062 J	156	0.10 J	0.15 J	40	< 0.10 U	< 0.10 U	NA
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	167 J	134	22	107	106	1	344	371	8
		Alkalinity, carbonate (as CaCO3)	NS	< 5.0 U	< 5.0 U	NA	< 5.0 U	< 5.0 U	NA	< 5.0 U	< 5.0 U	NA
		Alkalinity, total (as CaCO3)	NS	167 J	134	22	107	106	1	344	371	8

Table 3-14
Comparison of Analytical Results between Bennett Pumps and Passive Samplers in Source Area Wells, Q4 2017

		Well Location ID:		KAFB-106014			KAFB-106059					
		Sample Date:		10/20/2017	10/19/2017		10/19/2017					
		Field Sample ID:		GW014-174	GW014-174D		GW059-174	GW059-174D		GW059-574	GW059-574D	
		Sample Collection Method:		Bennett Pump	DMS[a]		Bennett Pump	DMS[a]		Bennett Pump	DMS[a]	
Parameter	Analytical Method	Analyte	Project Screening Level[d]	Result[b]	Result[b]	Relative Percent Difference[c]	Result[b]	Result[b]	Relative Percent Difference[c]	Result[b]	Result[b]	Relative Percent Difference[c]
EDB	Method SW8011 (µg/L)	1,2-dibromoethane	0.05	0.85	4.2	133	5.9	1.0	142	6.4	1.0	146
VOCs	Method SW8260C (µg/L)	Benzene	5	160	310	64	15000	3700	121	16000	3600	127
		Ethylbenzene	700	67	45	39	870	86	164	890	86	165
		Toluene	750	170	2	195	18000	6600	93	18000	6300	96
		Xylenes, Total	620	140	2	194	3000	1700	55	3000	1600	61
Total Metals	Method SW6010C (mg/L)	Calcium	NS	67.2	54.8	20	138	113	20	137	138	1
		Iron, dissolved	1.0	< 0.200 U	< 0.200 U	NA	7.38	5.98	21	7.28	5.98	20
		Magnesium	NS	10.2	8.83	14	24.7	20.3	20	24.5	24.7	1
		Manganese, dissolved	0.2	1.19	1.91	46	4.07	3.45	16	4.08	3.49	16
		Potassium	NS	2.79	2.32	18	3.99	3.47	14	3.94	3.99	1
		Sodium	NS	30.4	25.6	17	41.1	34.8	17	40.6	42.1	4
	Method SW6020A (mg/L)	Arsenic	0.01	< 0.0020 U	< 0.0020 U	NA	0.0024 J	0.0020 J	18	0.0023 J	0.0017 J	30
		Lead	0.015	< 0.00025 U	< 0.00025 U	NA	< 0.00025 U	< 0.00025 U	NA	< 0.00025 U	< 0.00025 U	NA
Anions	Method E300.0 (mg/L)	Bromide	NS	1.8 J	1.6 J	12	2.3 J	2.2 J	4	2.3 J	2.0 J	14
		Chloride	250	55.0	23.7	80	61.4	52.6	15	61.0	47.4	25
		Sulfate	250	21.0	17.1	20	< 5.0 U	< 5.0 U	NA	< 5.0 U	3.0 J	NA
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[e]	< 0.10 U	0.79 J	NA	< 0.10 U	< 0.10 U	NA	< 0.10 U	< 0.10 U	NA
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as CaCO3)	NS	165	168	2	403	382	5	406	372	9
		Alkalinity, carbonate (as CaCO3)	NS	< 5.0 U	< 5.0 U	NA	< 5.0 U	< 5.0 U	NA	< 5.0 U	< 5.0 U	NA
		Alkalinity, total (as CaCO3)	NS	165	168	2	403	382	5	406	372	9

Table 3-14
Comparison of Analytical Results between Bennett Pumps and Passive Samplers in Source Area Wells, Q4 2017

[a] Sample aliquots were collected using dual-membrane samplers.

[b] Nondetect results are reported less than the LOD.

[c] RPD is calculated as (A-B) / (A+B/2) X 100 where the Bennett pump result is A and the DMS result is B.

-- = sample not analyzed for this parameter

DMS = dual-membrane sampler

EDB = ethylene dibromide (1,2-dibromoethane)

LOD = limit of detection

LOQ = limit of quantitation

NA = RPD is not calculated if both results are nondetect or if one or both of the results are below the LOQ.

RPD = relative percent difference

VOC = volatile organic compound

Shaded = RPD value exceeds 35 percent field duplicate sample precision criteria (Kirtland AFB Quality Assurance Project Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Solid Waste Management Unit ST-106/SS-111 (USAF 2016)

Qualifiers:

J = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated.

U = Qualifier denotes the analyte is not detected above the detection limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Table 3-15
Comparison of Analytical Results between YSI and Aqua-Troll Parameter Readings for Source Area Wells, Q4 2017

		Well Location ID:		KAFB-106005			KAFB-106006			KAFB-106008			KAFB-106014		
		Sample Date:		10/23/2017	10/18/2017		10/19/2017	10/19/2017		10/20/2017	10/18/2017		10/20/2017	10/19/2017	
		Sample Depth (ft bgs):		483			486			490			490		
		Reference Elevation Interval		4857			4857			4857			4857		
Parameter	**Analyte**	**NMAC NMWQCC[a]**	**Project Screening Level[b]**	**YSI**	**Aqua-troll**	**Relative Percent Difference**	**YSI**	**Aqua-troll**	**Relative Percent Difference**	**YSI**	**Aqua-troll**	**Relative Percent Difference**	**YSI**	**Aqua-troll**	**Relative Percent Difference**
Field Parameters	Turbidity	NS	NS	10.9	3.63	100.1	2.65	1.43	59.8	9.07	1.5	143.2	3.66	3.00	19.8
	Temperature (°C)	NS	NS	18.3	19.77	7.7	19.9	20.43	2.6	17.50	19.82	12.4	18.80	19.68	4.6
	DO (mg/L)	NS	NS	0.6	0.07	156.9	2.94	.64	128.5	0.28	0.07	120.0	0.32	0.20	46.2
	Spec Cond (µS/cm)	NS	NS	2463	1590.6	43.0	334.5	329.46	1.5	882.00	967.87	9.3	618.00	467.64	27.7
	pH (S.U.)	NS	NS	7.06	7.03	0.4	7.57	7.51	0.8	6.95	6.89	0.9	7.44	7.16	3.8
	ORP (mV)	NS	NS	-154.90	-270.9	54.5	-161.10	-169.50	5.1	-113.30	-152.10	29.2	-210.60	-194.30	8.1

Table 3-15
Comparison of Analytical Results between YSI and Aqua-Troll Parameter Readings for Source Area Wells, Q4 2017

		Well Location ID:		KAFB-106059		
		Sample Date:		10/19/2017	10/19/2017	
		Sample Depth (ft bgs):		488		
		Reference Elevation Interval		4857		
Parameter	**Analyte**	**NMAC NMWQCC[a]**	**Project Screening Level[b]**	**YSI**	**Aqua-troll**	**Relative Percent Difference**
Field Parameters	Turbidity	NS	NS	1.66	273.15	197.6
	Temperature (°C)	NS	NS	20.2	19.99	1.0
	DO (mg/L)	NS	NS	0.58	.77	28.1
	Spec Cond (µS/cm)	NS	NS	1016	896.17	12.5
	pH (S.U.)	NS	NS	7.24	6.78	6.6
	ORP (mV)	NS	NS	-134.8	-77.5	54.0

Table 3-15
Comparison of Analytical Results between YSI and Aqua-Troll Parameter Readings for Source Area Wells, Q4 2017

[a] NMWQCC numeric standards per the NMAC Title 20.6.2.3101A, Standards for Groundwater of 10,000 mg/L Total Dissolved Solids Concentration or Less (NMAC 2004). For metals,

[b] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.

µg/L = microgram per liter
µS/cm = microsiemens per centimeter
ºC = degree Celsius
EPA = U.S. Environmental Protection Agency
ID = identification
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
REG = normal field sample
Spec Cond = Specific Conductivity
S.U. = standard unit

Table 3-1
Groundwater Monitoring Program

Location ID	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Monitoring Well Objective[h,g]
Newly Added Wells[a]					
KAFB-106041[b,d]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106149-484[b,e]	EDB, metals anions, alkalinity	BTEX, EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106151-484[b,e]	EDB, metals anions, alkalinity	BTEX, EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106152-484[b,e]	EDB, metals anions, alkalinity	BTEX, EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106153-484[b,e]	EDB, metals anions, alkalinity	BTEX, EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106235-463[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106235-492[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106235-521[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106236-461[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106236-490[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	NA
KAFB-106236-519[b,f]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106240-449[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106241-428[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106242-418[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106243-425[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106244-445[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
KAFB-106245-460[b,g]	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, metals anions, alkalinity	EDB, VOCs, metals anions, alkalinity	NA
Groundwater Monitoring Wells[a]					
KAFB-106001	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106002	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106003	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106004	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106005[b]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106006	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106007	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106008	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106009[b]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106010	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106011	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106012R	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, metals, anions, alkalinity, FP	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106013	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106014	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106015[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106016	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106017	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106018	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106019	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106020	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106021[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106022[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106023[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106024	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106025[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106026[c]	--	--	--	--	Groundwater Monitoring
KAFB-106027	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106028	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106029[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106030[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal

Table 3-1
Groundwater Monitoring Program

Location ID	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Monitoring Well Objective[h,g]
Groundwater Monitoring Wells[a]					
KAFB-106031[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106032[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106033[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106034[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106035[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106036[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106037[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106038	None	BTEX, Naphthalene, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Signal
KAFB-106039	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106040	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106042[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106043[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106044	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106045	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106046	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106047	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106048	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106049[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106050[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106051[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106052[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106053[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106054[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106055[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106057[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106058[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106059	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106060	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106061	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106062	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106063	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106064	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106065	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106066	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106067	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106068	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106069	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106070[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106071[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106072[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106073	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106074	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106075	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106076	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106077	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106078	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106079[b]	None	BTEX, EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106080	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area

Table 3-1
Groundwater Monitoring Program

Location ID	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Monitoring Well Objective[h,g]
Groundwater Monitoring Wells[a]					
KAFB-106081	None	BTEX, EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Source Area
KAFB-106082	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106083	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106084	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106085[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106086[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106087[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106088[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106089[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106090[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106091[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106092[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106093[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106094	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106095[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106096	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring
KAFB-106097	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106098	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106099	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106100	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106101	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106102	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106103[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106104[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106105[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106106[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106107[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106201[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106202[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106203[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106204[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106205[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106206[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106207[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106208[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106209[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106212[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106213[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106214[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106215[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106216[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106217[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106218[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106219[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106220[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106221[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106222[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal

Table 3-1
Groundwater Monitoring Program

Location ID	1st Quarter (January-March)	2nd Quarter Semiannual (April-June)	3rd Quarter (July-September)	4th Quarter Annual (October-December)	Former Well Designation and Monitoring Well Objective[h,g]
Groundwater Monitoring Wells[a]					
KAFB-106223[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106224[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106225[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106226[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106227[b]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106230[c]	--	--	--	--	Groundwater Monitoring
KAFB-106231[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-106232[b]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal
KAFB-3411	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring

Table 3-1
Groundwater Monitoring Program

[a] The groundwater monitoring network consists of 149 wells that are currently sampled under Solid Waste Management Unit ST106/SS-111. Select wells are identified for additional or more frequent monitoring of risk-driving constituents. Metals analysis consists of select total metals (arsenic, calcium, lead, potassium, magnesium, and sodium) and select dissolved metals (iron and manganese). Anions analysis consists of bromide, chloride, nitrate/nitrite nitrogen, and sulfate. Field parameters include pH, specific conductivity, dissolved oxygen, oxidation reduction potential, temperature, and turbidity.

[b] Well sampled with passive sampling methodology; field parameter measurements are not representative and therefore are not collected.

[c] Well no longer sampled due to safety concerns.

[d] Newly added to the groundwater monitoring network in fourth quarter 2017.

[e] Newly added to the groundwater monitoring network in first quarter 2018.

[f] Newly installed groundwater monitoring well that was completed in fourth quarter 2016.

[g] Newly installed groundwater monitoring well that was completed in third quarter 2018.

[h] In previous reports, groundwater monitoring wells were designated based on their location related to groundwater gradient and the EDB plume or on their location, i.e. “downgradient”, “source area”, etc. However, due to the changing regional groundwater gradient (see Quarter 2 2018 Quarterly Monitoring Report [USACE 2018]), these designations are not always appropriate. To simplify and more accurately represent dynamic hydrologic conditions, all groundwater monitorings wells will be designated simply as “groundwater monitoring well” after completing a baseline sampling of four quarters. Prior to the baseline sampling, the wells will be designated as "newly added".

[g] Monitoring Well Objective:
Newly Added Wells—Newly added wells can include both existing wells that are added to the GWM network as well as newly installed wells. Newly added GWM wells require a minimum of four consecutive quarters of baseline full-suite analytical sampling before receiving a designation that determines the long-term sampling regime. These wells have been added to define the plume boundaries and provide additional water table monitoring due to the rising groundwater elevation.

Source Area Wells—Primarily located in the BFF south of Randolph Road SE and proximal to the spill site on-Base. Sampled during Q2 and Q4. These wells monitor the higher concentrations of dissolved-phase plumes on-Base.

Downgradient Proximal Wells—Located north of Ridgecrest Drive SE surrounding the historical EDB plume to the west, north, and east into the distal portion of the GWM network. Analytical data for these wells have been historically below the maximum contaminant level (MCL) for EDB. Sampled every quarter. These wells assist in plume boundary definition.

Veterans Affairs (VA) Proximal Wells—Three sets of nested wells located between the historical EDB plume south of Ridgecrest Drive SE and the Raymond G. Murphy VA Medical Center as a means to detect any potential contaminant migration towards the VA medical campus. Sampled every quarter. These wells provide additional wellhead protection monitoring for the VA supply well.

Signal Wells—Three wells located along the south side of Ridgecrest Drive SE to monitor benzene, toluene, ethylbenzene, and total xylenes (BTEX) and provide early indication if the benzene plume is migrating from the source area into the interim measure target area capture zone created by the groundwater extraction wells. Sampled during Q2 and Q4.

Groundwater Monitoring Wells—Primarily location north of Ridgecrest Drive SE within the historical footprint of the EDB plume. Analytical data from these wells serve to define the volume and mass of the EDB plume throughout the GWM network. Sampled in Q2 and Q4.

BTEX = benzene, toluene, ethylbenzene, and total xylenes

EDB = ethylene dibromide

FP = field parameter
ID = identification

NA = not applicable

VOC = volatile organic compound

USACE. 2018. *Quarterly Monitoring Report April-June 2018, Bulk Fuels Facility, SWMU ST-106/SS-111.*
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