KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO

QUARTERLY MONITORING REPORT – JANUARY–MARCH 2020
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

JUNE 2020

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Bulk Fuels Facility
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Kirtland Air Force Base, New Mexico

June 2020

Prepared for
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14. ABSTRACT

This Quarterly Report describes activities performed from January 1 through March 31, 2020 and the progress of the Resource Conservation and Recovery Act interim measures for soil and groundwater remediation at Solid Waste Management Units ST-106/SS-111, the Bulk Fuels Facility site, at Kirtland Air Force Base, New Mexico. During the quarter, groundwater, drinking water from supply wells, and the groundwater treatment system (GWTS) samples were collected and analyzed for contaminants of concern (notably ethylene dibromide [EDB]) and other relevant field and laboratory parameters. The GWTS extracted and treated 50,111,500 gallons of groundwater through a granular activated carbon filtration system and discharged the treated effluent to the Tijeras Arroyo Golf Course main pond and injection well KAFB-7 in the first quarter (Q1) 2020. The GWTS was running 99 percent of the time and removed approximately 3,145 milligrams of EDB in Q1 2020.

15. SUBJECT TERMS

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PREFACE

This Quarterly Monitoring Report – January–March 2020 has been prepared by EA Engineering, Science, and Technology, Inc., PBC (EA) for Kirtland Air Force Base under the U.S. Army Corps of Engineers Contract Number W912DR-12-D-0006, Delivery Order DM01 and pertains to the Base Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, located in Albuquerque, New Mexico.

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

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.

Monitoring of groundwater and drinking water, and operation of the groundwater treatment system was conducted from January 1 through March 31, 2020.

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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
DO	dissolved oxygen
DoD	Department of Defense
DP	Discharge Permit
EDB	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
ISB	*in situ* bioremediation
LNAPL	light non-aqueous phase liquid
MCL	maximum contaminant level
mg	milligram(s)
mg/L	milligram(s) per liter
NMED	New Mexico Environment Department
NMWQCC	New Mexico Water Quality Control Commission
No.	number
O&M	operation and maintenance
ORP	oxidation-reduction potential
psi	pound(s) per square inch
PSL	project screening level
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

LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

RCRA	Resource Conservation and Recovery Act
REI	reference elevation interval
SE	Southeast
SVM	soil vapor monitoring
SWMU	Solid Waste Management Unit
TCZ	Target Capture Zone
USGS	U.S. Geological Survey
VA	Veterans Affairs
VOC	volatile organic compound

EXECUTIVE SUMMARY

The investigation and remediation 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 (Permit Number NM9570024423 [RCRA Permit]) (New Mexico Environment Department [NMED], 2010). This Quarterly Report for the first quarter (Q1) of calendar year 2020 summarizes the activities performed from January 1 through March 31, 2020. These activities include regular groundwater monitoring, evaluation of the dissolved-phase ethylene dibromide (EDB) groundwater pump and treat interim measure, and data collected to support the EDB *in situ* biodegradation and bioventing pilot studies.

The long-term bioventing pilot test continued in Q1 2020 with a respiration test including field parameter measurements and analytical vapor samples in January. The Bioventilation Construction and Initiation Report that included data collected through Q4 2019 was submitted in January 2020, as requested by NMED in a letter dated February 25, 2019 (NMED, 2019). A summary of data collected during Q1 2020 is provided in this report.

In Q1 2020, 65 Kirtland AFB BFF groundwater monitoring wells were sampled. Depths to groundwater were gauged in 165 groundwater monitoring wells, including four recently installed wells. During gauging, light non-aqueous phase liquid was detected and measured in three of these wells. All three wells were located on-Base within the source area plume (KAFB-106059, KAFB-106076, and KAFB-106150-484) (Figure 3-5).

Long-term monitoring for the *in situ* biodegradation pilot test resumed in Q1 2020 with a sampling event in March. Eight wells were sampled for contaminants associated with the BFF release and for pilot test indicator compounds.

U.S. Geological Survey (USGS) monitors 14 sentinel wells between the EDB plume and drinking water wells owned and operated by the Albuquerque Bernalillo County Water Utility Authority and Raymond G. Murphy Veterans Affairs (VA) Medical Center. These wells are tested quarterly to provide advance notice of any threat to drinking water wells. No contaminants associated with the BFF release were detected in Q1 2020 samples. The USGS transmittal letter, including the Q1 2020 data results, are provided in Appendix E-5.

Three Kirtland AFB drinking water supply wells (KAFB-003, KAFB-015, and KAFB-016) and the VA drinking water supply well (ST106-VA-2) are located in the vicinity of the dissolved-phase EDB plume. These wells were sampled monthly to verify the safety of the drinking water. No contamination was detected in January, February, or March 2020 samples from the drinking water supply wells.

Groundwater pumped from extraction wells in the dissolved-phase EDB plume is treated in the GWTS located at Kirtland AFB. This groundwater flows into the GWTS and is filtered through one of two treatment trains which consist of a series of two granular activated carbon vessels. The water flowing into the GWTS had low concentrations of EDB, below the maximum contaminant level of 5 micrograms per liter, and had no detections of benzene, toluene, ethylbenzene, and total xylenes (BTEX). While flowing through the granular activated carbon vessels, the EDB was filtered out of the groundwater, and the effluent flow leaving the GWTS had no detections of EDB or BTEX. During Q1 2020, an estimated 3,145 milligrams of EDB was captured in the lead GAC vessels.

The GWTS ran for 99 percent of the time from January 1 to March 31, 2020, and 50,111,500 gallons of groundwater were treated during this period. Of the treated water, 14,707,400 gallons were discharged to the Tijeras Arroyo Golf Course main pond, and 35,404,100 gallons were discharged to gravity-fed injection well KAFB-7.

Planned activities for Q2 2020 include:

- Continuing the long-term bioventing pilot test (a report summarizing the available results of the bioventing pilot tests was submitted to NMED in January 2020);
- Sampling the soil vapor monitoring points;
- Sampling the Q2 2020 designated wells and measuring depth to water in the groundwater monitoring network beginning in April 2020;
- Sampling drinking water supply wells for organic compounds on a monthly basis;
- Performance assessment modeling for the GWTS; and
- Operating and performing routine maintenance and monitoring of the GWTS.

1. INTRODUCTION

The investigation and remediation 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 (Permit Number [No.] NM9570024423 [RCRA Permit]) (New Mexico Environment Department [NMED], 2010). This Quarterly Report for the first quarter (Q1) of calendar year 2020 presents non-cumulative data for Q1 2020, summarizing the activities performed from January 1 through March 31, 2020. 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). Key regulatory correspondence for Q1 2020 is provided in Appendix A.

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 site description, history, and conceptual site model. Ongoing groundwater interim measures and pilot tests in groundwater and the vadose zone are discussed in this report along with the GWTS performance monitoring and site monitoring results.

The groundwater monitoring (GWM), bioventing pilot test, and interim measure for SWMUs ST-106/SS-111 were conducted concurrently. The Q1 2020 monitoring program was performed in accordance with multiple work plans: (1) bioventing pilot test (NMED, 2019; Kirtland AFB, 2017b, 2018b), (2) GWM (NMED, 2017a, 2018a; Kirtland AFB, 2017a, 2017c, 2017d), and (3) drinking water supply wells (NMED, 2018b; Kirtland AFB, 2017c). GWTS operations, sampling, and treated effluent discharge were performed in accordance with the Operations and Maintenance (O&M) Plan (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c).

2. VADOSE ZONE MONITORING

This section describes the vadose zone monitoring activities conducted during Q1 2020. No soil vapor monitoring (SVM) activities were performed during Q1 2020 (Section 2.1). Section 2.2 provides a brief overview of the bioventing pilot project activities completed in Q1 2020 with additional information provided in Appendix B.

2.1 Vadose Zone Soil Vapor Data Collection

No SVM activities were performed during Q1 2020. The SVM program is performed semiannually in the second quarter (Q2) and fourth quarter (Q4) of each year (NMED, 2018b). Appendices C and D remain in this report as placeholders; information will be included in these appendices following the semiannual sampling events. The next semiannual SVM event will be performed in Q2 2020.

2.2 Bioventing Pilot Test

The bioventing pilot test is being performed in accordance with the Work Plan for Bioventing and Air-Lift Enhanced Bioremediation Pilot Tests, dated November 2017 (Work Plan [Kirtland AFB, 2017b]), the Bioventing Respiration Test Procedure (Test Procedure [Kirtland AFB, 2018b]), and the approval conditions requested by NMED in a letter dated February 25, 2019 (NMED, 2019). The bioventing pilot test utilizes existing soil vapor extraction wells and existing SVM wells for air injection and two new SVM well clusters at KAFB-106V1 and KAFB-106V2 for observation. Well locations are shown on Figure 2-1. The bioventing system installation, respiration testing, and long-term bioventing startup are detailed in the Bioventilation Construction and Initiation Report (Kirtland AFB, 2020) submitted to NMED in January 2020.

Between January 6 and January 13, 2020, the air injection blowers were shut down and a week-long respiration test was performed to assess the oxygen utilization rates and operational parameters.

Oxygen utilization observed from observation wells KAFB-106V1 and KAFB-106V2 ranged from 0.03 to 0.81 percent (%) per day. Biodegradation rates ranged from 0.02 to 0.48 milligrams per kilogram per day and oxygen demand air flow rates ranged from 0.27 to 1.05 standard cubic feet per minute. The oxygen radius of influence was calculated using oxygen utilization and ranged from 134 to 264 feet (ft).

Analytical vapor samples were collected at the end of the respiration test and represent the end of the first quarter of the long-term bioventing pilot test operation. Analytical samples were collected in accordance with the approved Test Procedure (Kirtland AFB, 2018b). Samples were submitted to an analytical laboratory for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons-gasoline range organics by U.S. Environmental Protection Agency (EPA) Method TO-3, volatile organic compounds (VOCs) by EPA Method TO-15 SIM, and fixed gases/C1-C5 hydrocarbon compounds by ASTM International D1945. Elevated contaminant of concern concentrations continue to be observed within the source area vadose zone; laboratory results are provided in Appendix B. The air injection blowers were restarted after sample collection. Long-term bioventing data collected during the Q1 2020 are presented in the Quarterly Bioventing Status Report provided in Appendix B.

3. GROUNDWATER MONITORING

At the end of Q1 2020, the BFF GWM well network was comprised of 167 GWM wells (Figure 3-1 and Tables 3-1 and 3-3). A total of 65 of these wells were sampled in Q1 in accordance with the sampling requirements (Table 3-2).

Appendices pertinent to GWM are listed below:

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

Throughout this report, GWM wells, and their associated groundwater data, are described based on reference elevation intervals (REIs). REIs are below ground surface elevations that divide the GWM network into datasets comprised of wells that are screened across their respective elevations, allowing for a vertical evaluation of groundwater parameters and contaminant locations. Currently, wells are assigned to three REIs (4857, 4838, and 4814). A detailed explanation of how the REIs are defined is provided in Appendix E-6.

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 ethylene dibromide (EDB) plume or simply on their location (i.e., source area, etc.). In response to the changing regional groundwater gradient (Appendix E-6), well designations are no longer used in figures and analytical results tables. The former well designations and current monitoring well objectives are provided in Table 3-1 along with the current sampling regime by quarter. A detailed description of the former well designations and the frequency of samples collected by designation is provided in Appendix E-6.

In this report, sample results from GWM wells are discussed based on their location (north or south) in relation to Ridgecrest Drive Southeast (SE). The source area plume containing dissolved-phase benzene is located south of Ridgecrest Drive SE. The Target Capture Zone [TCZ] for the groundwater interim measure is the distal section of the EDB plume located north of Ridgecrest Drive SE.

GWM activities included measuring the depths to groundwater and LNAPL (Table 3-3 and Figures 3-2 through 3-5) and measuring field parameters in wells sampled with low-flow sampling pumps (Appendix E-3). Field parameter measurements are not part of the passive sampling methodology, as discussed in more detail in Appendix E-6. Groundwater samples were collected and submitted for laboratory analysis from 65 wells in Q1 2020 (Tables 3-4 through 3-5 and Figures 3-6 and 3-7).

3.1 New Groundwater Monitoring Activities

After four quarters of baseline sampling, newly added wells will be assigned an objective and moved into their relevant sampling regime in the following quarter (Table 3-7), in accordance with the Work Plan for Data Gap Monitoring Well Installation (Kirtland AFB, 2017d) and the Work Plan for Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling (Kirtland AFB, 2017c). For wells KAFB-106S1,

KAFB-106S8, and KAFB-106247, baseline sampling was completed in Q1 2020. For well KAFB-106S7, baseline sampling will be completed in Q3 2020.

3.2 Groundwater and Light Non-Aqueous Phase Liquid Gauging

Depth to water was measured in 165 of the 167 GWM wells between January 20 and 22, 2020 (Figures 3-2 through 3-4 and Table 3-3), using two Solinst Model 122 oil-water interface probes and a Geotech interface probe in accordance with the approved work plan (Kirtland AFB, 2017a). Each well was also checked for the presence of LNAPL. Gauging deviations are discussed in Section 3.2.1. Of the 88 GWM wells in REI 4857 gauged in Q1 2020, 32 wells had screens that intersected the current water table, while the remaining wells had submerged well screens (Figure 3-2). Screen submergence in REI 4857 wells that were gauged in Q1 2020 ranged from 0.17 to 25.72 ft (KAFB-106025) (Table 3-3).

The interface probe was checked for proper operation and cable integrity prior to each use and 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 Bennett pump sampling, every well was checked for the presence of LNAPL prior to the installation of the pump. Depths to LNAPL and groundwater were recorded in the field on well gauging forms (Appendix E-2).

Depth to water in the GWM wells was gauged by three field teams. One dedicated oil-water interface probe (Solinst Model 122 Serial No. 253056) was used to measure water levels in wells that have historically met hazardous waste criteria, while two dedicated oil-water interface probes (Solinst Model 122 Serial No. 253053 and Geotech Serial No. 0001) were used to measure water levels in the remainder of the wells. Depth to water measurement differences between the three interface probes were assessed by measuring depth to water with each interface probe in three GWM wells located south of the source area (KAFB-106027, KAFB-106044, and KAFB-106045) (Appendix E-2). The measurement difference between the two Solinst probes is approximately 0.01 ft. 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 (Kirtland AFB, 2016b). The difference of 0.01 ft measured between the two Solinst probes is minimal as compared to the naturally occurring changes that could exist between measurements taken over the 3-day gauging period. Based on this, corrections were not made to water level measurements taken with these interface probes in Q1 2020. The measurement difference between the Geotech probe and the two Solinst probes was approximately 0.08 ft, 53% of natural groundwater level fluctuations. Therefore, depth to water measurements taken using the Geotech probe were adjusted down by 0.08 ft.

Groundwater elevations from each REI were used to create potentiometric surface maps (Figures 3-2 through 3-4). Horizontal groundwater gradients within the monitoring network are dominated by a radial flow pattern toward depressions in the water table, which are primarily attributable to groundwater extraction.

LNAPL was measured in KAFB-106059, KAFB-106076, and KAFB-106150-484 in Q1 2020 at thicknesses of 0.16, 0.04, and 0.11 ft, respectively (Table 3-3 and Figure 3-5). All three wells with LNAPL are located south of Ridgecrest Drive SE on-Base and within the footprint of the Source Area Plume.

3.2.1 Gauging Deviations

Water level measurements were not obtained from two wells during the Q1 2020 synoptic gauging event. Depth to water in wells KAFB-106063 and KAFB-106064 were not measured during the synoptic

gauging event in January 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), however, water levels were measured prior to sampling in March (Appendix I-6). The water level was measured in KAFB-106211 approximately 1.5 ft above the bottom of the screen. In previous quarters, an interface probe was deployed in this well, but there was no water column to measure; this well will be added to the sampling network after the water level rises enough to allow for passive sampling (approximately 5 ft of water column).

3.3 Groundwater Sampling

Quarterly groundwater samples were collected from 65 wells in the GWM network between January 6 and 17, 2020, using portable low-flow pump systems or passive sampling methods (Table 3-2). Well locations are shown on Figure 3-1, and sentinel well locations are shown on Figure 3-8. Groundwater samples collected for the Q1 2020 monitoring event were analyzed for EDB, BTEX, anions, alkalinity, and metals (Table 3-2). Groundwater samples were analyzed by Eurofins Lancaster Laboratories Environmental, LLC located in Lancaster, Pennsylvania, which maintains current Department of Defense (DoD) Environmental Laboratory Accreditation Program certification. The groundwater purge and sampling forms are provided in Appendix E-3 and the chain-of-custody forms are provided in Appendix E-4.

For low-flow sampling, well water was purged continuously at a flow rate between 0.5 and 1 liter per minute, while field parameters (turbidity, temperature, dissolved oxygen [DO], specific conductivity, pH, and oxidation reduction potential [ORP]) were measured and recorded every 5 minutes. Samples were collected after parameters stabilized for three consecutive readings within 10% of one another, or after 1 hour of purging. Field parameters were recorded on the field forms (Appendix E-3). Wells without a dedicated low-flow pump sampling system were designated, based on historical analytical data, as either clean, intermediate, or hazardous. Decontaminated non-dedicated tubing and portable low-flow pumps were used to sample wells designated as clean. The entire sampling assembly was decontaminated following use at each well. Dedicated tubing specific to a given well was used for wells designated as intermediate or hazardous.

Field parameters are not collected as part of the passive sampling methodology, as discussed in more detail in Appendix E-6. Field parameters were measured only from wells that were sampled using the low-flow methodology.

3.3.1 Sampling Deviations

Due to a failure in the sleeve surrounding the passive sampler, insufficient sample volume was available for the full suite of analytes at GWM wells KAFB-106149-484 and KAFB-106S7-451. A partial suite of analytes was collected for these two wells. At KAFB-106149-484, full aliquots were collected for EDB and dissolved metals, and a reduced volume aliquot was collected for total metals; there was insufficient volume to collect aliquots for anions or alkalinity. At KAFB-106S7-451, full aliquots were collected for dissolved metals and nitrate/nitrite, and reduced volume aliquots were collected for EDB and BTEX; there was insufficient volume to collect aliquots for total metals, alkalinity, or the remaining anions (bromide, chloride, sulfate). The reduced aliquots did not affect the analytical results.

3.4 Data Review and Usability Results

The Q1 2020 groundwater analytical data underwent EPA 100% Level 3 data validation by an independent third-party subcontractor, Environmental Data Services, Inc., Virginia Beach, Virginia,

following data verification. Data verification is performed on a data set to ensure method, procedural, and contractual compliance with project-specific requirements and is typically performed by the contractor responsible for data collection. Data validation is an analyte- and sample-specific process that extends the evaluation of analytical data beyond the data verification process to determine the analytical quality of a specific data set.

Data verification and data validation are sequential steps in a data review process that can be performed by either the contractor collecting the data or an independent third-party subcontractor. For this project, verification is performed by the contractor to ensure compliance with the project Quality Assurance Project Plan (QAPjP), Appendix D of the Work Plan for BFF Expansion of the Dissolved-Phase Plume GWTS and associated QAPjP (Kirtland AFB, 2017a), and is performed during or at the completion of field or laboratory data collection activities. EPA Stage 3 data validation is conducted by Environmental Data Services, Inc. and incorporates the data verification process and further evaluates data quality based on analytical method-specific quality control criteria and DoD Quality Systems Manual requirements as documented in the project QAPjP. 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) that are provided in Appendix F-3.

Subsequent to performing data validation, the data qualifiers were uploaded to the EQuIS® project database. Data were further assessed for accuracy, precision, representativeness, comparability, completeness, and sensitivity and determined to achieve the project data quality objectives in Q1 2020. All groundwater data presented and discussed in this report are final validated data. The Environmental Resources Program Information Management System data deliverable is scheduled for submittal in April 2020. The Data Quality Evaluation Report for groundwater samples collected in Q1 2020 is provided in Appendix F-1, and the final laboratory data reports are included in Appendix F-2.

3.5 Project Screening Levels

The project screening levels (PSLs) were selected to satisfy the requirements of the Kirtland AFB RCRA Permit (NMED, 2010) as the lower of:

- New Mexico Water Quality Control Commission (NMWQCC) standards per the New Mexico Administrative Code, Title 20.6.2.3103, Standards for Groundwater of 10,000 milligrams per liter (mg/L) Total Dissolved Solids Concentration or Less (New Mexico Administrative Code, 2018). For metals, the NMWQCC standard applies to dissolved metals and total mercury.

- EPA National Primary Drinking Water Regulations, maximum contaminant levels (MCLs) and secondary MCLs, and Title 40 Code of Federal Regulations (CFR) Parts 141 and 143.

If no MCL or NMWQCC standard existed for an analyte, the PSL used was the EPA Tapwater Regional Screening Level (EPA, 2019).

The analytical method utilized to analyze for total nitrate/nitrite nitrogen concentrations (Method 353.2) cannot identify individual nitrate and nitrite concentrations without modification. Typically, in highly oxidizing and near neutral aquifers, nitrate is the primary nitrogen species found in groundwater (Langmuir, 1997). Previous studies in the Albuquerque Basin have used total nitrate/nitrite nitrogen concentrations as equivalent to nitrate nitrogen concentrations (Longmire, 2016; Anderholm et al., 1995). Therefore, total nitrate/nitrite nitrogen concentrations were compared to the 10 mg/L MCL for nitrate in this report.

Groundwater MCLs or PSLs for all analytes are provided in the groundwater analytical data tables included in this report.

3.6 Groundwater Quality Data

Groundwater samples collected for the Q1 2020 monitoring event were analyzed for EDB, while select wells were also analyzed for BTEX, total metals (arsenic, lead, calcium, magnesium, potassium, and sodium), dissolved metals (iron and manganese), anions (bromide, chloride, sulfate, and nitrate/nitrite nitrogen), and alkalinity (Table 3-2). Alkalinity, sulfate, dissolved iron, and dissolved manganese concentrations provide direct and indirect evidence of anaerobic conditions and thus are important indicators of bioremediation (Section 3.6.5). Contaminant concentrations were compared to their respective MCLs or PSLs and 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, field duplicate results are not discussed in this text for comparison purposes unless otherwise noted and duplicate data are not provided on figures. The results for the duplicate sample analyses are included in the Data Quality Evaluation Report (Appendix F-1).

Analytical data for both organic and inorganic compounds for the newly added wells are provided in Table 3-4. Data for organic compounds for GWM wells are provided in Table 3-5 and inorganic compounds in Table 3-6. The status of baseline sampling of newly added wells is provided in Table 3-7. Historical EDB and BTEX results for the previous three samples are provided in Tables 3-8 and 3-9, respectively. EDB and BTEX concentrations are presented on Figures 3-6 and 3-7, respectively.

3.6.1 Organic Compounds Analytical Results

3.6.1.1 EDB Analytical Results

Groundwater samples from 65 wells were analyzed for EDB in Q1 2020. This includes 37 wells located north of Ridgecrest Drive SE and 28 wells located south of Ridgecrest Drive SE. EDB analytical results are presented in Tables 3-4 and 3-5, and on Figure 3-6. EDB concentrations exceeded the EPA MCL of 0.05 micrograms per liter (µg/L) in samples from 10 wells.

- None of the EDB exceedances were from wells that are north of Ridgecrest Drive SE.

- The 10 EDB exceedances were from wells that are south of Ridgecrest Drive SE, eight of which were on-Base in the immediate vicinity of or within the BFF. The highest EDB concentrations south of Ridgecrest Drive SE were detected in the groundwater samples collected from well KAFB-106153-484 and newly added well KAFB-106S1-447 (460 and 450 µg/L, respectively).

3.6.1.2 BTEX Analytical Results

Groundwater samples from 24 wells were analyzed for BTEX in Q1 2020. These wells are located south of Ridgecrest Drive SE. BTEX analytical results are presented in Tables 3-4 and 3-5, and on Figure 3-7. There were no exceedances of BTEX compounds in GWM wells located near drinking water supply wells in Q1 2020. BTEX was detected in areas consistent with previous Source Area Plume designations.

- Benzene exceeded the 5.0 µg/L MCL in eight wells located south of Ridgecrest Drive SE (Figure 3-7); these exceedances were in REI 4857. The highest benzene concentration was detected in KAFB-106S2-451 (9,800 µg/L) in the Source Area Plume.

- Toluene exceeded the 1,000 µg/L PSL in six wells located south of Ridgecrest Drive SE (Figure 3-7); these exceedances were in REI 4857. The highest toluene concentration was detected in KAFB-106S2-451 (12,000 µg/L) in the Source Area Plume.

- Ethylbenzene exceeded the 700 µg/L PSL in five wells located south of Ridgecrest Drive SE (Figure 3-7); these exceedances were in REI 4857. The highest ethylbenzene concentration was detected in KAFB-106S5-446 (1,600 µg/L), located off-Base in the northern extent of the Source Area Plume.

- Total xylenes exceeded the 620 µg/L PSL in six wells located south of Ridgecrest Drive SE (Figure 3-7); these exceedances were in REI 4857. The highest total xylenes concentration was detected in KAFB-106S2-451 (4,600 µg/L), located in the Source Area Plume.

3.6.2 Inorganic Compounds 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 23 wells were sampled for inorganic compounds in Q1 2020; five of these wells are located north of Ridgecrest Drive SE, and 18 are located south of Ridgecrest Drive SE. Inorganic analytical results are presented in Tables 3-4 and 3-6. Inorganic sampling is conducted to assess geochemical aquifer conditions. Inorganic sample results are evaluated and discussed in the Q2 and Q4 reports when sufficient data are collected to evaluate geochemical aquifer conditions.

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

USGS monitors 14 sentinel wells between the Kirtland AFB BFF EDB plume and the Albuquerque Bernalillo County Water Utility Authority water supply wells as a means of providing independent observation of water quality in the vicinity of the Albuquerque Bernalillo County Water Utility Authority water supply wells. Samples are collected from these sentinel wells quarterly. For Q1 2020, these samples were collected using dual membrane samplers from January 6 to 9, 2020. 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 2020 samples. The USGS transmittal letter, including the Q1 2020 data results, is provided in Appendix E-5.

3.6.4 Field Parameters

Field parameters were collected from 10 wells located south of Ridgecrest Drive SE that were sampled using the low-flow sampling method. Field parameter data are provided on sample collection logs provided in Appendix E-3.

3.6.5 Bioremediation Indicators

Bioremediation indicators are not assessed in Q1 and the third quarter due to the limited data set.

3.7 Groundwater Monitoring Well Network Operation and Maintenance

The GWM well network was inspected to ensure that the condition of all protective covers and wellheads met the intended requirements for performance and security. During the inspection period, cleaning and maintenance were performed and all GWM wells were determined to be fully serviceable.

As of the end of Q1 2020, 92 dedicated Bennett pumps have been removed from the GWM well network as part of a transition to passive sampling for the monitoring program. No dedicated Bennett pumps were removed during Q1 2020. Although several wells are sampled using portable Bennett pumps, ongoing issues with this sampling system continue to arise due to biofouling of wells, corrosion of components, and mechanical failure due to aging parts.

4. DRINKING WATER SUPPLY WELL MONITORING

Three drinking water supply wells (KAFB-003, KAFB-015, and KAFB-016) provide drinking water to on-Base employees and tenants of Maxwell Housing, which is located off-Base. One drinking water supply well (ST106-VA-2) provides drinking water to Veterans Affairs (VA) Medical Center patients, employees, and visitors. These drinking water wells are community water systems that are regulated by the NMED Drinking Water Bureau in accordance with the Safe Drinking Water Act.

As part of the monitoring associated with the BFF site, these wells are sampled monthly and analyzed for EDB and BTEX due to their proximity to the BFF plume containing dissolved-phase EDB and benzene.

4.1 Drinking Water Supply Well Sampling and Analysis Procedures

Drinking water supply wells KAFB-003, KAFB-015, KAFB-016, and ST106-VA-2 were sampled in January, February, and March 2020. Field measurements, sample collection, packaging, shipping, and analyses were performed in accordance with the Vadose Zone Coring, Vapor Monitoring, and Water Supply Sampling Work Plan and associated QAPjP (Kirtland AFB, 2017c). Field DO, pH, ORP, conductivity, and temperature were measured using an YSI Professional Plus multiparameter water quality probe; turbidity was measured using a Hach 2100Q or Geotech portable turbidity meter. Instrument calibrations were performed at the start of each day of the sampling event to ensure accurate readings.

Prior to sample collection, the pump at each well ran for a minimum of 15 minutes. The sample port at each drinking water well head was then opened for 60 seconds prior to sampling to purge any entrained sediment. Following filling, the sample containers were immediately sealed, checked for headspace bubbles, labeled, and put into an iced cooler. Daily quality control reports are provided in Appendix G-1. Completed sample collection logs and chain-of-custody forms are provided in Appendix G-2. Drinking water supply samples were collected and submitted for the following analyses:

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

Samples were submitted to Eurofins TestAmerica Laboratories in Savannah, Georgia, for analytical testing. Analytical results were validated by Environmental Data Services, Inc. The Data Quality Evaluation Reports are provided in Appendix H-1. The Eurofins TestAmerica Laboratories Analytical Reports for January, February, and March 2020 are provided in Appendix H-2.

4.2 Data Review and Usability

The Q1 2020 drinking water analytical data underwent a 100% Level 3 data validation performed by Environmental Data Services, Inc., Virginia Beach, Virginia, following data verification. The data verification and validation steps are discussed in detail in Section 3.4.

All data were valid based on necessary criteria, and no data were qualified as rejected. The technical data completeness was 100%. The data met data quality objectives and were appropriate for use in project decision-making. The quality control parameter and data quality indicator (precision, bias [accuracy], representativeness, comparability, completeness, and sensitivity) evaluation results are provided in the Data Quality Evaluation Report and Data Validation Report provided in Appendix H-1. Final validated data are provided in Table 4-1.

4.3 Drinking Water Supply Well Water Quality for Q1 2020

All four wells continue to show no detectable concentrations of EDB or BTEX in the drinking water that is supplied to Kirtland AFB employees and tenants and VA Medical Center patients, employees, and visitors. Analytical results for January, February, and March 2020 are presented in Table 4-1, Figure 4-1, and Appendix H-2. Analytical data were compared to drinking water MCLs and Secondary MCLs. The MCLs for drinking water supply wells are established in the EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Parts 141 and 143.

5. GROUNDWATER TREATMENT SYSTEM OPERATION AND PERFORMANCE

This section presents Q1 2020 operations, performance metrics, system expansion activities, maintenance activities of the GWTS, and a summary of the EDB ISB pilot test activities.

Appendices pertinent to GWTS operation and performance are:

- Appendix I-1 GWTS Plant O&M Documentation
- Appendix I-2 New Mexico 811 Line Locate Tickets
- Appendix I-3 GWTS Performance Sample Collection Logs
- Appendix I-4 Data Quality Evaluation Report – GWTS Samples
- Appendix I-5 Data Packages – GWTS Samples.
- Appendix I-6 EDB *In Situ* Biodegradation Pilot Test Quarterly Summary.

5.1 Groundwater Treatment System Operation

The GWTS is part of the interim measure performed pursuant to the corrective action provisions in Kirtland AFB's RCRA Permit. The purpose of the interim measure is to collapse and treat the dissolved-phase EDB plume within the TCZ. The GWTS was operated during Q1 2020 to treat groundwater extracted from the distal portion of the plume north of Ridgecrest Drive SE, and is comprised of:

- Four extraction wells (KAFB-106228, KAFB-106233, KAFB-106234, and KAFB-106239);
- Conveyance piping;
- A dual train 800-gallon per minute (gpm) maximum capacity carbon treatment system located within the GWTS building; and
- Effluent conveyance lines discharging to either the Tijeras Arroyo Golf Course main pond (GCMP) or gravity-fed injection well KAFB-7 (Figure 5-1).

In addition to the operational procedures outlined in the O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c), the GWTS is also subject to the terms of Class V Underground Injection Well Discharge Permit (DP) No. 1839 (DP-1839) (NMED, 2017b) for injecting treated groundwater to KAFB-7. DP-1839 became effective on April 28, 2017. 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

5.1.1.1 Quarterly Run Time

During Q1 2020, the GWTS treated 50,111,500 gallons of groundwater; 14,707,400 gallons was discharged to the GCMP, and 35,404,100 gallons was discharged to injection well KAFB-7. During Q1 2020, Trains 1 and 2 treated 23,291,600 and 26,819,900 gallons, respectively. Table 5-2 provides a cumulative summary of groundwater quantities extracted, treated, and discharged.

For the purpose of run time evaluation, GWTS operation is defined as the time when groundwater was being pumped from at least one extraction well and was subsequently treated and discharged. Table 5-3

provides a monthly and quarterly summary of the extraction well performance, including individual extraction well run times.

From January 1 through March 31, 2020, the GWTS was operational 99% of the time (Table 5-3), which is similar to Q4 2019. Planned and unplanned system shutdowns affecting GWTS overall run time during Q1 2020 are described in Sections 5.3.1 and 5.3.3.

5.1.2 Extraction Well Performance Metrics

The following subsection provides a summary of the performance metrics for the four extraction wells. Quarterly extraction well performance data required for DP-1839 reporting compliance are provided in Table 5-3. Average operational extraction flow rates do not include flow rates during downtime. Well performance figures are provided in Appendix I-1.

5.1.2.1 Quarterly Extraction Rates

During Q1 2020, three extraction wells were operated based on GCMP capacity with the following priority: Extraction wells KAFB-106228 and KAFB-106239 continue to capture EDB mass based on treatment system performance monitoring and wellhead sampling, and thus are considered the highest priority for operation of the GWTS. Well KAFB-106234, which serves as a redundant distal plume capture well for protection of the municipal water supply wells northeast of the BFF groundwater plume is the next priority for the GWTS. Well KAFB-106233 is the lowest priority due to lack of EDB plume capture based on monitoring data showing non-detect or trace concentrations from 2017 to present. The flow from well KAFB-106233 was reduced during maintenance activities and periods when the GWTS effluent was otherwise limited, and therefore KAFB-106233 had limited run time during Q1 2020.

Water was extracted from KAFB-106228 during Q1 2020 at an average operational flow rate of 143.7 gpm with a run time of 98% (Table 5-3).

Water was extracted from KAFB-106234 during Q1 2020 at an average operational flow rate of 175.7 gpm with a run time of 98% (Table 5-3).

Water was extracted from KAFB-106239 during Q1 2020 at an average operational flow rate of 75.2 gpm with a run time of 96% (Table 5-3).

Water was extracted from KAFB-106233 during Q1 2020 at an average operational flow rate of 161.8 gpm with a run time of 0.4% (Table 5-3).

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 I-1.
Groundwater was injected into KAFB-7 during Q1 2020 at an average operational flow rate of 411.4 gpm with a run time of 74.7% (Table 5-4).

5.2 Groundwater Treatment System Performance Monitoring and Ethylene Dibromide Removal

GWTS performance monitoring is performed in conformance with the most recently approved Work Plan (Kirtland AFB, 2017a) as well as Appendix L of the O&M Plan, Sampling and Analysis Plan, and any subsequent revisions. DP-1839 provides additional sampling criteria. Table 2 of DP-1839 provides a list of the constituents of concern that are most frequently monitored at the GWTS (NMED, 2017b). Q1 2020 GWTS analytical performance metrics and EDB mass removal are discussed in the following sections.

5.2.1 Quarterly Sampling and Analysis

Water samples from Train 1 and Train 2 were collected monthly from the untreated influent (sample identifications GWTS-BFF-INF1 and GWTS-BFF-INF2), from a port located after the lead granular activated carbon (GAC) vessel (sample identifications GWTS-BFF-GAC1 and GWTS-BFF-GAC2) but before the final GAC vessel, and from the treated effluent (sample identifications GWTS-BFF-EFF1 and GWTS-BFF-EFF2) in Q1 2020. These samples were analyzed for EDB, BTEX, and dissolved iron and manganese. In previous reports, the samples collected between the two GAC vessels were referred to as post-GAC samples, but will hereafter be referred to as mid-GAC samples to clarify that they are not effluent samples. EDB concentrations and mass removal for Q1 2020 are summarized in Table 5-5. Sample results and effluent discharge limits are provided in Table 5-6 for Train 1, Table 5-7 for Train 2, and Table 5-8 for the extraction wells. GWTS performance sample collection logs are provided in Appendix I-3.

In Q1 2020, an estimated 3,145 milligrams (mg) of EDB was captured in the lead GAC vessels. Of this total, 1,073 mg was removed by Train 1 and 2,072 mg was removed by Train 2. Quantities of mass were calculated by taking the sum of each monthly influent concentration multiplied by the respective total weekly treated volume (Table 5-5).

Concentrations of EDB were detected in the influent samples of Train 1 below the 0.05 µg/L MCL at estimated concentrations of 0.016 J, 0.016 J, and 0.012 J µg/L in January, February, and March 2020, respectively (Table 5-6). The J-qualifier denotes that the analyte was positively identified, but at a low enough concentration that the associated numerical value is estimated. Concentrations of EDB were detected in the influent samples of Train 2 at estimated concentrations of 0.021 J, 0.025 J, and 0.016 J µg/L in January, February, and March 2020, respectively (Table 5-7). BTEX was not detected in any influent samples collected from either train during Q1 2020.

Dissolved manganese was detected below the PSL in all monthly influent samples collected from Train 2 in Q1 2020, but was not detected in any monthly influent samples collected from Train 1 (Tables 5-6 and 5-7). Dissolved iron was not detected in any monthly influent samples collected from either Train 1 or Train 2 (Tables 5-6 and 5-7).

Concentrations of EDB, BTEX, dissolved iron, and manganese were non-detect in all mid-GAC and effluent monthly samples collected from Train 2 during Q1 2020 (Table 5-7). Concentrations of BTEX and dissolved manganese were non-detect in all mid-GAC and effluent monthly samples collected from Train 1 during Q1 2020 (Table 5-6). Concentrations of EDB were detected in the mid-GAC samples of Train 1 at estimated concentrations of 0.013 J and 0.012 J µg/L in January and February 2020, respectively. EDB was not detected in the Train 1 mid-GAC sample in March 2020, or in any effluent samples of Train 1 during Q1 2020. Dissolved iron was detected below the PSL in the March 2020 effluent sample of Train 1.

All four extraction wells (KAFB-106228, KAFB-106233, KAFB-106234, and KAFB-106239) were sampled in January 2020 for EDB, BTEX, dissolved iron and manganese, and total metals (calcium, magnesium, potassium, sodium, arsenic, and lead). EDB was detected at concentrations below the PSL in the samples from KAFB-106228 and KAFB-106234 (Table 5-8). EDB was not detected in KAFB-106233 or KAFB-106239 (<0.019 µg/L). BTEX and dissolved iron were not detected in any extraction well samples. Dissolved manganese was detected only in KAFB-106239 but below the PSL. All total metals analyzed (calcium, magnesium, potassium, sodium, arsenic, and lead) were detected below the PSL in all four extraction wells.

5.2.2 Data Validation

The GWTS analytical data from Q1 2020 underwent EPA Stage 3 data validation by Environmental Data Services, Inc., Virginia Beach, Virginia, following data verification. The data verification and validation steps are discussed in detail in Section 3.4.

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 I-4 and the final laboratory data reports provided in Appendix I-5.

5.3 Groundwater Treatment System Maintenance and Expansion Activities

Maintenance activities at the GWTS were performed in accordance with the O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c). Maintenance activities performed at the GWTS in Q1 2020 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 (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c). A summary of routine maintenance activities is provided below.

5.3.1.1 Quarterly Routine Maintenance Activities

During Q1 2020, the effluent bag filters for Train 1 were changed out on March 26, 2020, and the effluent bag filters for Train 2 were changed out on March 27, 2020. Influent bag filters for Train 1 were changed out on March 30, 2020. Influent bag filters were not changed out for Train 2 in Q1 2020 as they did not reach the differential pressure requiring change outs (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c). The differential pressure along the lead GAC vessel on Train 1 was 1.1 pounds per square inch (psi) on January 2, 2020; and, on March 31, 2020, the differential pressure was 1.2 psi (Appendix I-1). On January 2, 2020, the differential pressure along the lead GAC vessel of Train 2 was 3.0 psi. The differential pressure in the lead GAC of Train 2 was 4.0 psi as of March 31, 2020.

The influent basket strainers were cleaned 15 times for Train 1 and 33 times for Train 2 throughout Q1 2020. The effluent Wye-strainers were cleaned two times for both Train 1 and Train 2 throughout Q1 2020. Wye-strainers/basket strainers were cleaned to maintain equalization of the influent tanks and prevent cavitation at the influent pump intakes. The Wye-strainers/basket strainers 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 2020 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.

5.3.2.1 Quarterly Conveyance Line Security

During Q1 2020, Kirtland AFB responded to five off-Base tickets requested through New Mexico 811 (Appendix I-2). There were no conveyance line breaches and all off-Base conveyance lines remained intact.

5.3.3 Non-Routine Maintenance Activities

Non-routine maintenance activities are defined as maintenance items that fall outside of the scope of the GWTS O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c) but need to be addressed in order to maintain consistent GWTS operation. A summary of shutdowns associated with non-routine maintenance activities occurring during Q1 2020 is provided on Table 5-10. Major non-routine maintenance performed in Q1 2020 is listed below.

5.3.3.1 Quarterly Non-Routine Maintenance Activities

On October 22, 2019, KAFB-106233 was temporarily taken offline to maintain the water level in injection well KAFB-7 and prevent high leveling the well during the winter months when the amount of water that can be diverted to the GCMP is minimal. KAFB-106233 remains temporarily offline pending KAFB-7 rehabilitation which is scheduled for May 2020.

On February 22, 2020, 6-inch Val-Matic check valves were installed on the effluent lines of Train 1 and Train 2 (one check valve per train).

Extraction well KAFB-106239 was disinfected on February 26, 2020. Extraction well disinfection was performed in accordance with the Standard Operating Procedure provided as Appendix R to the O&M Plan (NMED, 2016; Kirtland AFB, 2016a, 2017e, 2018c). The Standard Operating Procedure was approved by NMED on August 6, 2018 (NMED, 2018c). The analytical sampling suites for pre-treatment and post-treatment groundwater samples were approved on November 16, 2018 (NMED, 2018d).

Pre- and post-treatment samples were analyzed for bromate and chlorite using EPA Method E300.1. Perchlorate was analyzed using EPA Method E331.0. Bromate and chlorite were not detected in either sample. Perchlorate was detected at concentrations ranging from 0.12 to 0.14 µg/L, below the PSL of 14 µg/L, in both samples (Table I-1-5). Groundwater from the Middle Rio Grande Basin has naturally occurring perchlorate concentrations ranging from 0.12 to 1.8 µg/L (Plummer et al., 2006).

On March 6, 2020, the Train 2 effluent pump skid motor was replaced due to extensive wear on the bearings caused by standard use and aging of the motor.

5.3.4 Effluent Conveyance Line Integrity

Final retesting of the effluent conveyance line segment between the changeover valve and KAFB-7 will be performed after rehabilitation of KAFB-7 occurs. At that time a new surface-mounted flow control valve will be installed. The current valve is no longer sealing correctly; and while this does not result in leakage onto the ground surface, the failure to seal prevents proper line pressure testing. The seal integrity of the valve was tested again on January 24, 2020, with no success. The valve is scheduled for replacement in June 2020.

5.4 Ethylene Dibromide *In Situ* Biodegradation Pilot Test Quarterly Summary

The EDB ISB pilot test has been ongoing on Kirtland AFB. It is being performed directly south of Randolph Avenue, near the BFF groundwater source area. The main objective of the pilot test is to investigate *in situ* anaerobic bioremediation of EDB in groundwater. This pilot test is being completed under the NMED-approved EDB In Situ Biodegradation Pilot Test Work Plan (Kirtland AFB, 2016c).

Several new wells and existing monitoring wells (KAFB-106064 and KAFB-106063) are being utilized for this pilot test. The new wells include extraction wells KAFB-106EX1 and KAFB-106EX2; injection well KAFB-106IN1; and nested monitoring wells KAFB-106MW1-S, KAFB-106MW1-I, KAFB-106MW2-S, and KAFB-106MW2-I. Underground conveyance piping was also constructed to carry groundwater between the extraction and injection wells, directing the flow through an aboveground installation where amendments and/or tracers are introduced to the recirculated groundwater.

The pilot test was implemented in four phases, each briefly described below:

- ***Phase 1***—Evaluate baseline conditions and the distribution of recirculated water using tracer amendments.

- ***Phase 2***—Evaluate biostimulation in the subsurface after distribution of treatment amendments in recirculated groundwater.

- ***Phase 3***—Additional evaluation of biostimulation in the subsurface after distribution of treatment amendments in recirculated groundwater.

- ***Phase 4***—Continued monitoring with no active extraction/injection.

Per the Work Plan (Kirtland AFB, 2016c), Phase 3 was to consist of both biostimulation and bioaugmentation; however, after review of field results from both Phase 1 and Phase 2, it was determined that bioaugmentation was not warranted. Due to the success of biostimulation during Phase 2, Phase 3 was modified to further evaluate biostimulation and a Phase 3 Notification Letter was submitted to the NMED on July 26, 2018. The modified Phase 3 was approved by the NMED in a letter dated August 7, 2018 (NMED, 2018e).

Phase 4 of the pilot test, long-term rebound monitoring, began on November 19, 2018 and continues into 2020. One sampling event was conducted during 2019 as a part of Phase 4, occurring from January 16 through 21, 2019. This sampling event occurred approximately 2 months after the Phase 3 passive period was concluded, in accordance with the EDB In Situ Biodegradation Pilot Test Work Plan (Kirtland AFB, 2016c). The recirculation system was not operated during Phase 4, except briefly during extraction well sampling. A report summarizing activities associated with the pilot test through the first Phase 4 sampling event was submitted on April 18, 2019 in accordance with the NMED letter dated February 25, 2019

(NMED, 2019). In order to evaluate longer-term performance of ISB, wells associated with the pilot test will continue to be sampled on a quarterly basis beginning in 2020.

During Q1 2020, downhole equipment at two extraction wells (KAFB-106EX1 and KAFB-106EX2) and one injection well (KAFB-106IN1) was removed to assess the condition of the well infrastructure. The downhole infrastructure (drop pipe, pumps, injection flow control valve) was removed and inspected, and each well was video logged. Dedicated bladder pumps were installed in KAFB-106EX1 and KAFB-106IN1. Due to the presence of LNAPL, a dedicated bladder pump was not installed in extraction well KAFB-106EX2 during Q1 2020. The first quarterly long-term monitoring sampling event of 2020 was conducted from March 11 through 12, 2020. A more detailed discussion of Q1 2020 ISB pilot study activities and analytical results are included in the ISB Quarterly Summary Memorandum included as Appendix I-6.

6. INVESTIGATION-DERIVED WASTE

During Q1 2020, both hazardous and non-hazardous investigation-derived waste (IDW) were generated. Non-hazardous IDW consisted of liquids that were sourced from GWM operations. Liquid hazardous waste was generated during routine GWM activities performed during the quarter. There was no drilling-related solid or liquid IDW generated or disposed of during Q1 2020.

In addition to the IDW generated specifically during Q1 2020, non-hazardous IDW generated during Q4 2018 and 2019 and Q1 2020 from GWM activities was managed during Q1 2020. This section discusses the details of waste generated, disposed of, and managed during the quarter.

6.1 Non-Hazardous Investigation-Derived Waste

Non-hazardous IDW liquids comprised the majority of waste volume generated during the quarter. This waste was generated from quarterly GWM sampling activities. Appendices J-1 and J-2 provide specific information regarding the non-hazardous liquid and solid IDW generated and disposed of during Q1 2020.

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 (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 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 was held for further evaluation.

For Q1 2020, a total of 421 gallons of non-hazardous water was generated. Of this total volume, 380 gallons of IDW were processed through the GWTS. The water was sourced from GWM well purge activities as well as small volumes from GWM equipment decontamination. In all cases, the water met the GWTS acceptance criteria. All IDW water processed through the GWTS was discharged to the GCMP (Table J-1-1). There was no non-hazardous liquid IDW from other sources collected or disposed of during Q1 2020 (Table J-1-2).

Any liquid IDW that is collected, but not yet processed through the GWTS, is temporarily accumulated in the “Pending Disposal” area of the IDW yard. Typically, this category includes non-hazardous purge water collected during the quarter that meets GWTS acceptance criteria, but was held due to GWTS discharge limitations, O&M activities, or pending disposal approvals. By the end of Q1 2020, no GWM purge water was being held in the “Pending Disposal” category (Table J-1-3).

Any liquid IDW that is collected, but held pending receipt and evaluation of analytical data, is placed in the “Pending Analysis” area of the IDW yard. The total volume of liquid in this area at the end of Q1 2020 was 56 gallons. This consisted of a variety of waste generated from GWM activities, meter calibration fluid, and spent laboratory preservative fluids (Table J-1-4).

6.1.2 Non-Hazardous Drilling Liquid Investigation-Derived Waste

There was no liquid IDW generated or disposed of from drilling activities during Q1 2020 (Table J-1-5).

6.1.3 Non-Hazardous Well Drilling Liquid Investigation-Derived Waste Pending Disposal

There was no well drilling liquid IDW held as "Pending Disposal" at the end of Q1 2020.

6.1.4 Non-Hazardous Solid Waste

There was no non-hazardous, non-routine (GWTS maintenance) solid waste generated or disposed of during Q1 2020 (Appendix J-2, Table J-2-1).

Routine, non-hazardous disposable solid wastes were generated during GWM activities. These 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.

6.1.5 Non-Hazardous Well Drilling Solid Investigation-Derived Waste

During Q1 2020, there was no non-hazardous solid IDW (soil or mud) managed and disposed of during the quarter (Table J-2-2a). There was no soil or mud waste generated from well drilling activities held as "Pending Disposal" at the end of Q1 2020.

6.1.6 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 20.9.2.7 New Mexico Administrative Code [2011]). No special waste was generated or disposed of during Q1 2020 (Table J-2-2b). No special waste was held in "Pending Disposal" areas of the IDW yard at the end of Q1 2020.

6.2 Hazardous Investigation-Derived Waste

Hazardous or suspected hazardous IDW is accumulated in one of two RCRA less than 90-day accumulation areas associated with the Kirtland BFF Project. Hazardous waste generated from routine GWM sampling or well maintenance activities (purge or well development water) is placed in the Kirtland AFB BFF RCRA less than 90-day accumulation area. Hazardous or suspected hazardous waste generated during drilling activities is 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 is 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 is 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. Liquid IDW from these wells is managed as a potentially characteristically hazardous waste pending confirmation from laboratory analytical results. 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 that indicate purge water is hazardous, "Generator Knowledge" is 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).

All liquid hazardous waste (purge or well development water) is placed in 55-gallon steel drums with steel tops and locking rings (UN designation 1A2/Y1.2/100/**). When small volumes (less than five gallons) of waste is generated at a well, a plastic container with threaded top (jerrican) is used to contain the liquid. The jerrican is then placed in a steel, 55-gallon drum for more secure storage. All waste containers are 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 are inspected on a weekly basis by trained personnel as required under 40 CFR 262.34.

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

Upon receipt of analytical data, the IDW remains in the less than 90-day accumulation area if confirmed to be a hazardous waste. If the IDW is determined to not meet hazardous criteria based on analytical data, the non-hazardous waste is 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 is transported off Kirtland AFB after it is properly profiled, manifested, and approved for transport by the Kirtland AFB Hazardous Waste Management Group. Waste is transported by a licensed hazardous waste hauler to a permitted treatment, storage, and disposal facility.

When possible, liquid hazardous waste may be consolidated. This is typically done to combine small volumes of waste generated during passive sampling activities at multiple well sites. Consolidation is also performed to reduce the total number of drums that require offsite disposal. Appendix J-3 provides specific information regarding the hazardous liquid waste disposed of during Q1 2020.

6.2.1 Hazardous Investigation-Derived Waste Volume Q1 2020

During Q1 2020, hazardous purge water was generated from GWM activities. Well maintenance activities from Q4 2019 generated hazardous waste that was also managed in Q1 2020. A total of two drums of hazardous waste were held in the BFF less than 90-day area.

A total of 25 gallons of hazardous waste was disposed of from the BFF less than 90-day accumulation area by the end of Q1 2020. This drum contained consolidated GWM liquids from multiple wells utilizing a passive monitoring sampling technique. Passive monitoring methods generate a small volume of hazardous waste/well making consolidation of waste a routine waste management activity. This waste was removed from the less than 90-day accumulation area for disposal on February 26, 2020, by Advanced Chemical Transport Inc. under Manifest No. 012263976FLE (Table J-3-1).

One drum containing a jerrican with 0.5 gallons of hazardous waste sourced from well KAFB-106149 was held as "Pending Disposal" in the BFF less than 90-day accumulation area at the end of Q1 2020 (Table J-3-2). The 90-day deadline for disposal of this waste is June 17, 2020.

6.2.2 Hazardous Investigation-Derived Waste Volume Quarterly Totals

For the calendar year 2020, Table J-3-3 provides a cumulative total of hazardous waste disposed of from the Kirtland AFB BFF project. As of Q1 2020, a total of 25 gallons was manifested and disposed of in 2020.

7. PROJECTED ACTIVITIES

Q2 2020 will comprise the period between April 1 and June 30, 2020. Planned Q2 2020 activities are summarized below.

Vadose Zone Characterization and Monitoring

- Continue the long-term bioventing test.
- Perform semiannual SVM in Q2 2020.

Groundwater Monitoring

- Perform and report on quarterly GWM in Q2 2020.
- Report quarterly monitoring of USGS sentinel wells (by USGS).

Drinking Water Supply Well Monitoring

- Perform drinking water supply well monitoring monthly for organic compound analysis for the four wells sampled.

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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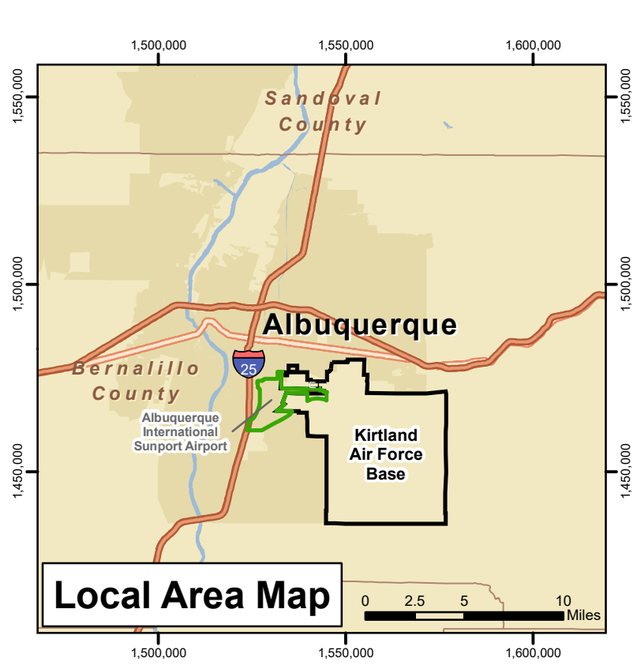
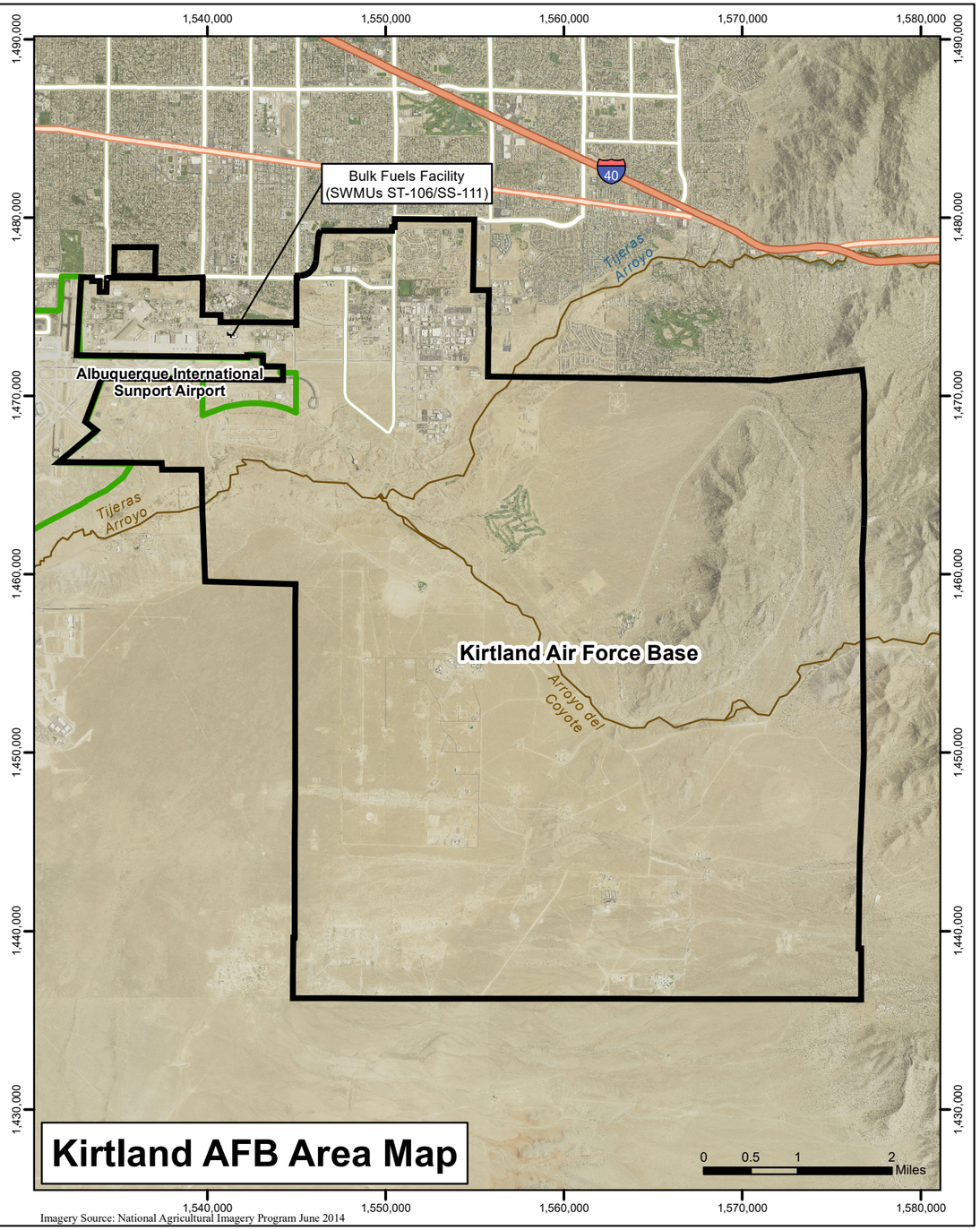
FIGURES





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

Note:
SWMU = Solid Waste Managment Unit

N

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 1-1

SITE LOCATION MAP

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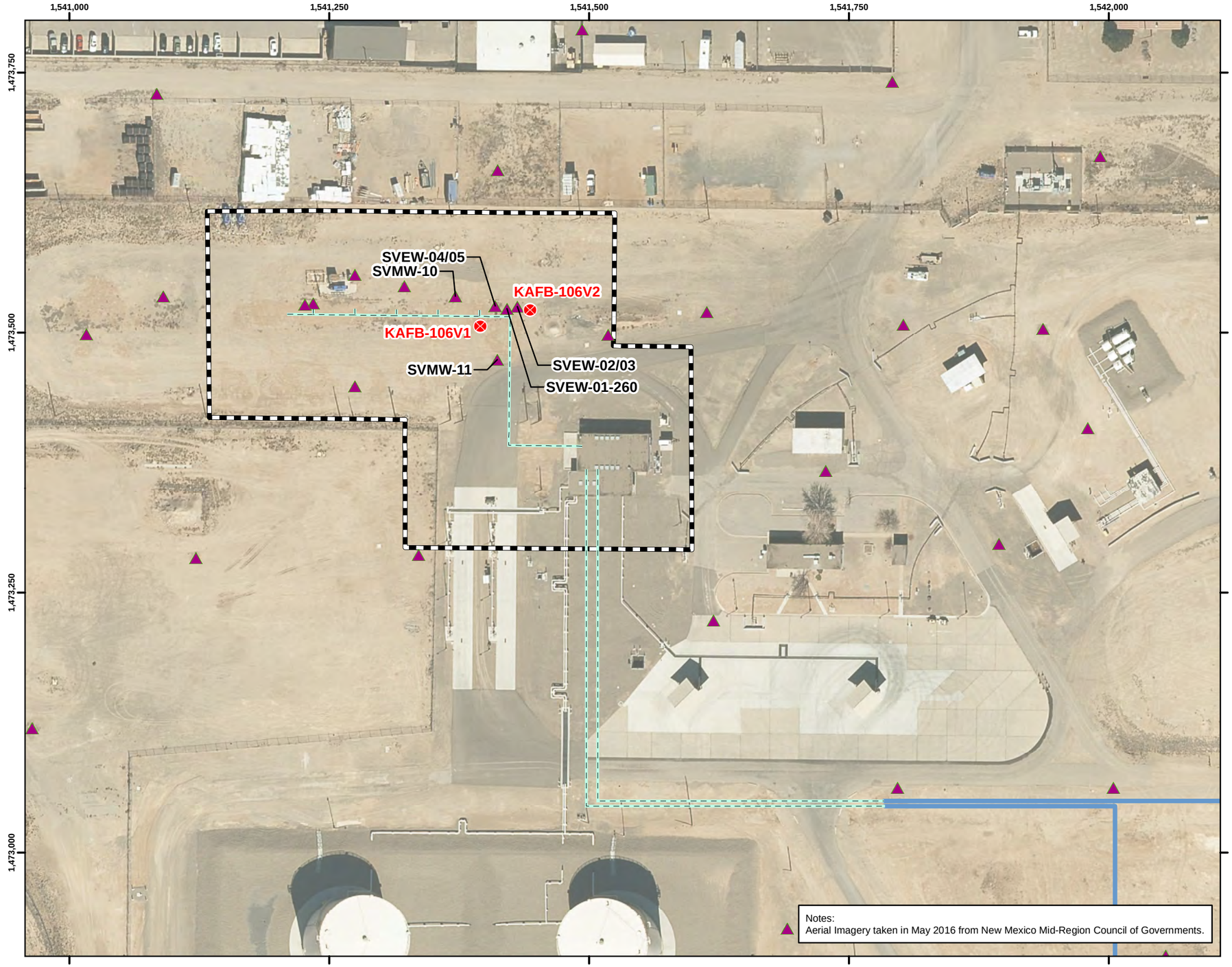
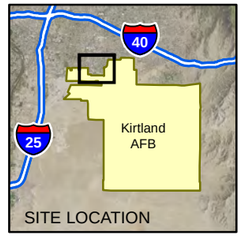


Legend

- Biovent Observation Well
- Existing Soil Vapor Well
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Source Area



N

0 50 100 200

Feet

1 inch = 100 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 2-1

BIOVENTING PILOT TEST AREA IN THE SOURCE AREA PLUME

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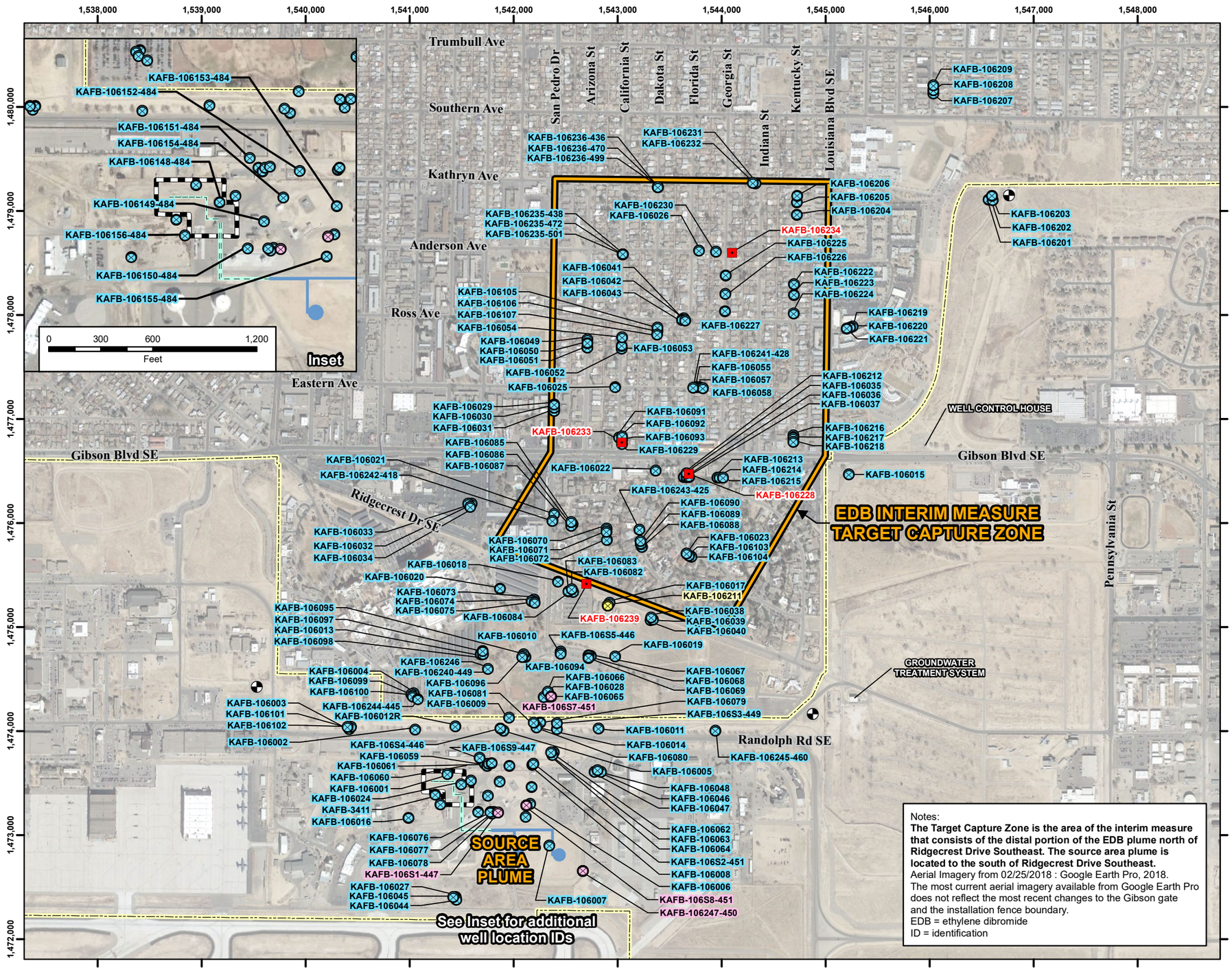
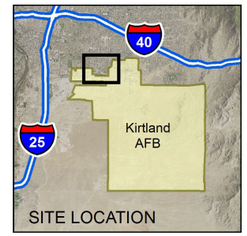


Legend

- Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Newly Added Monitoring Well
- Monitoring Well (pending water table rise)
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Source Area
- Target Capture Zone for Dissolved-Phase EDB



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
EDB = ethylene dibromide
ID = identification

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FIGURE 3-1

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

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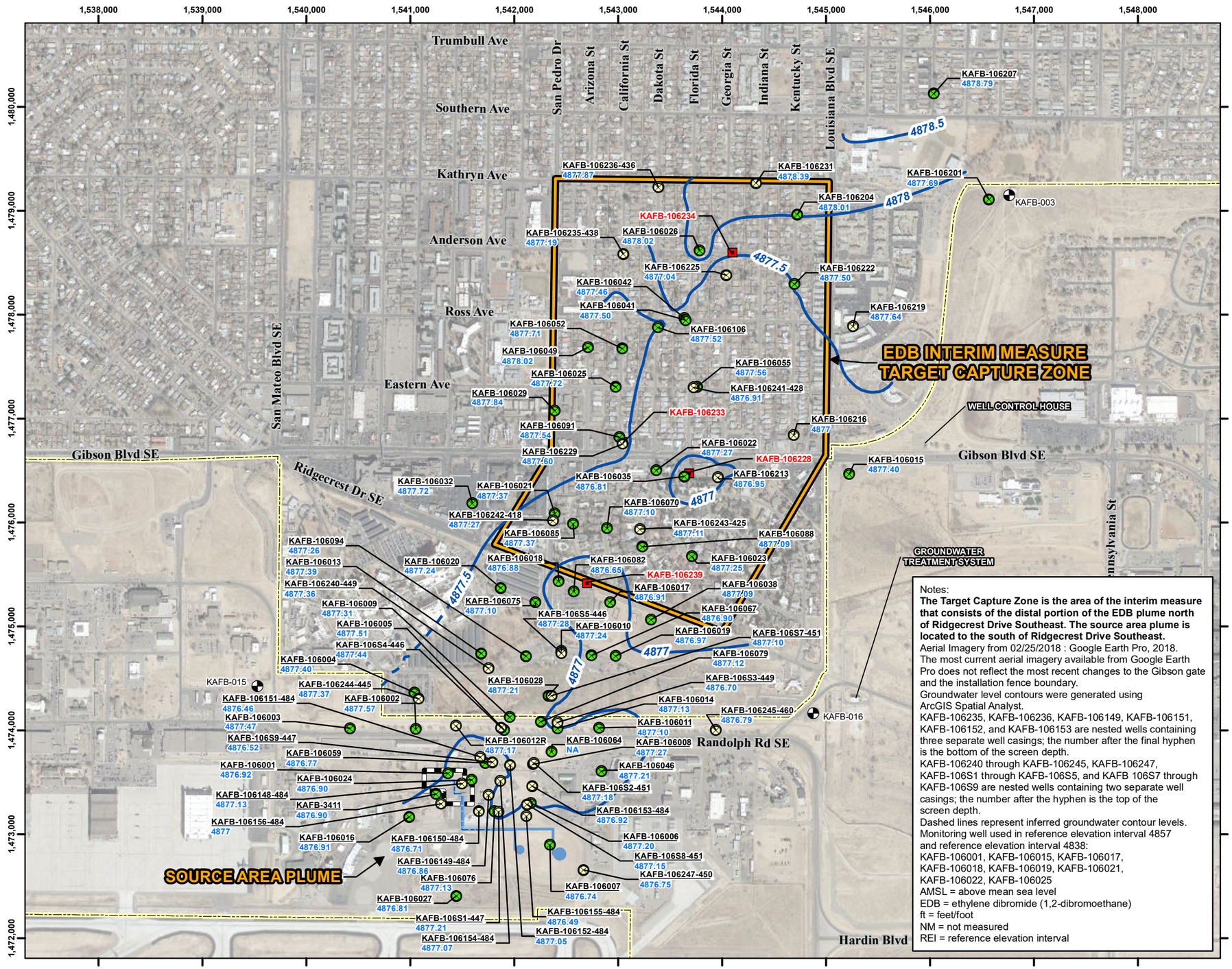
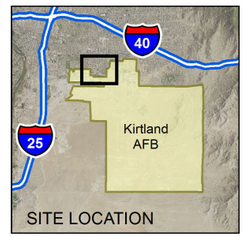


Legend

- 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
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Groundwater Level Contour (ft AMSL) (dashed where inferred)
- Installation Fence Boundary
- Source Area
- Target Capture Zone for Dissolved-Phase EDB
- 4877.69 Groundwater Elevation (ft AMSL)



Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
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.
Dashed lines represent inferred groundwater contour levels.
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

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 3-2

POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4857, JANUARY 20 - 22, 2020

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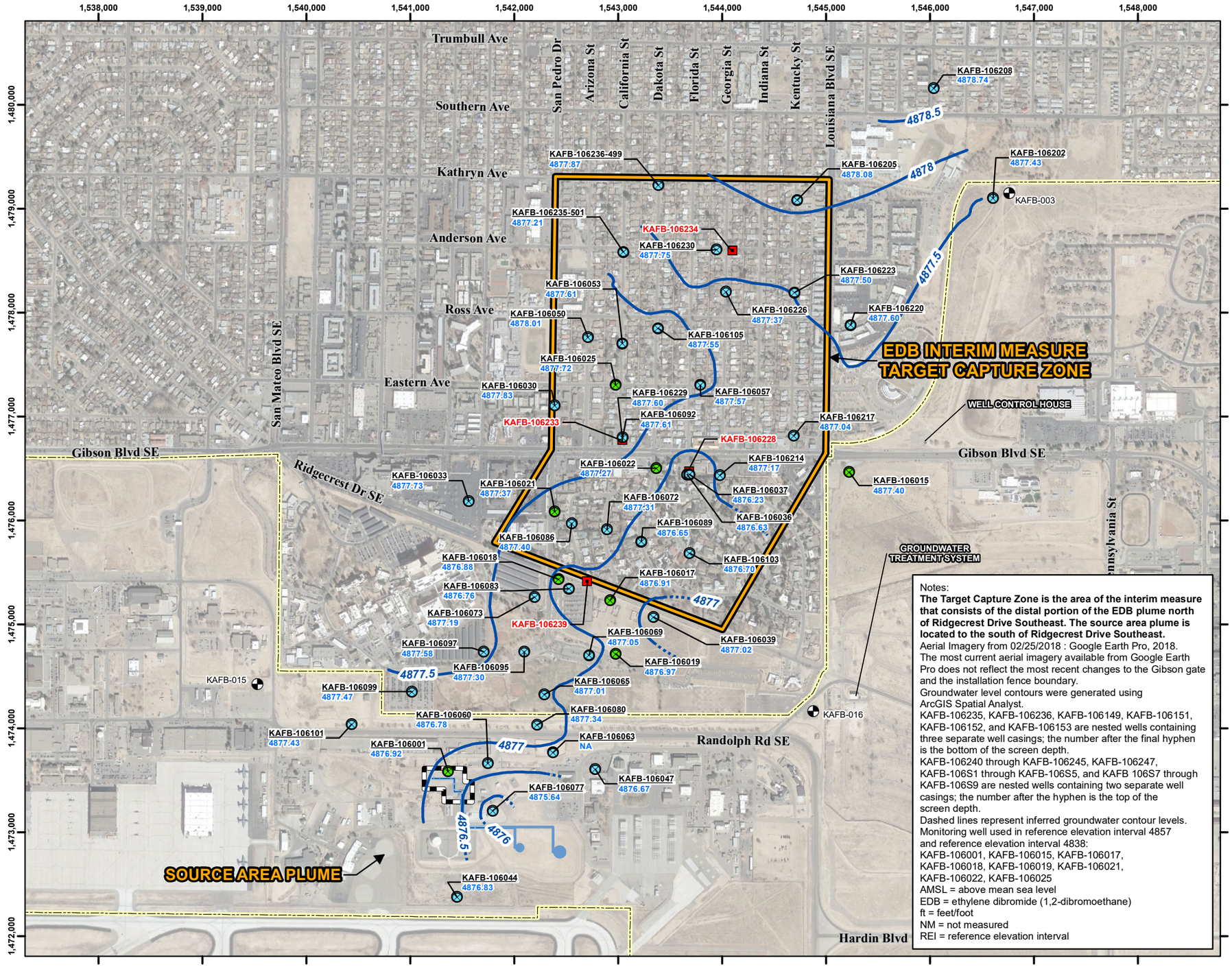
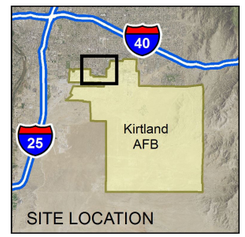


Legend

- REI 4838 Groundwater Monitoring Wells
- REI 4857/4838 Groundwater Monitoring Wells
- Drinking Water Supply Well
- Extraction Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Groundwater Level Contour (ft AMSL) (dashed where inferred)
- Source Area
- Target Capture Zone for Dissolved-Phase EDB
- 4877.43 Groundwater Elevation (ft AMSL)



Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
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.
Dashed lines represent inferred groundwater contour levels.
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

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 3-3

POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4838, JANUARY 20 - 22, 2020

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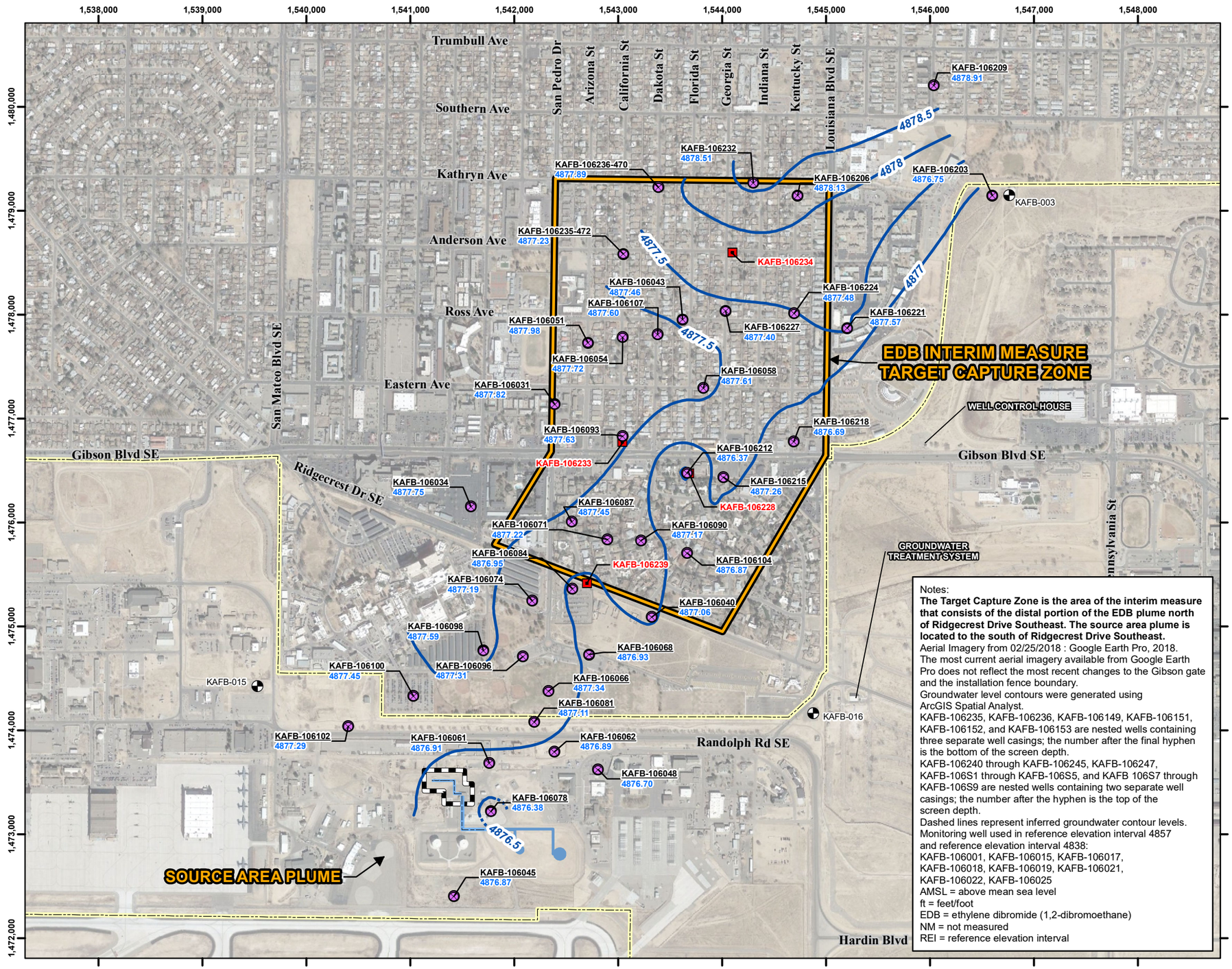
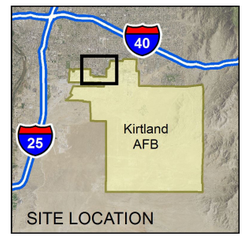


Legend

- REI 4814 Monitoring Wells with screens fully submerged
- Drinking Water Supply Well
- Extraction Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Groundwater Level Contour (ft AMSL) (dashed where inferred)
- Source Area
- Target Capture Zone for Dissolved-Phase EDB
- 4877.43 Groundwater Elevation (ft AMSL)



Notes:

The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
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.
Dashed lines represent inferred groundwater contour levels.
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
ft = feet/foot
EDB = ethylene dibromide (1,2-dibromoethane)
NM = not measured
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

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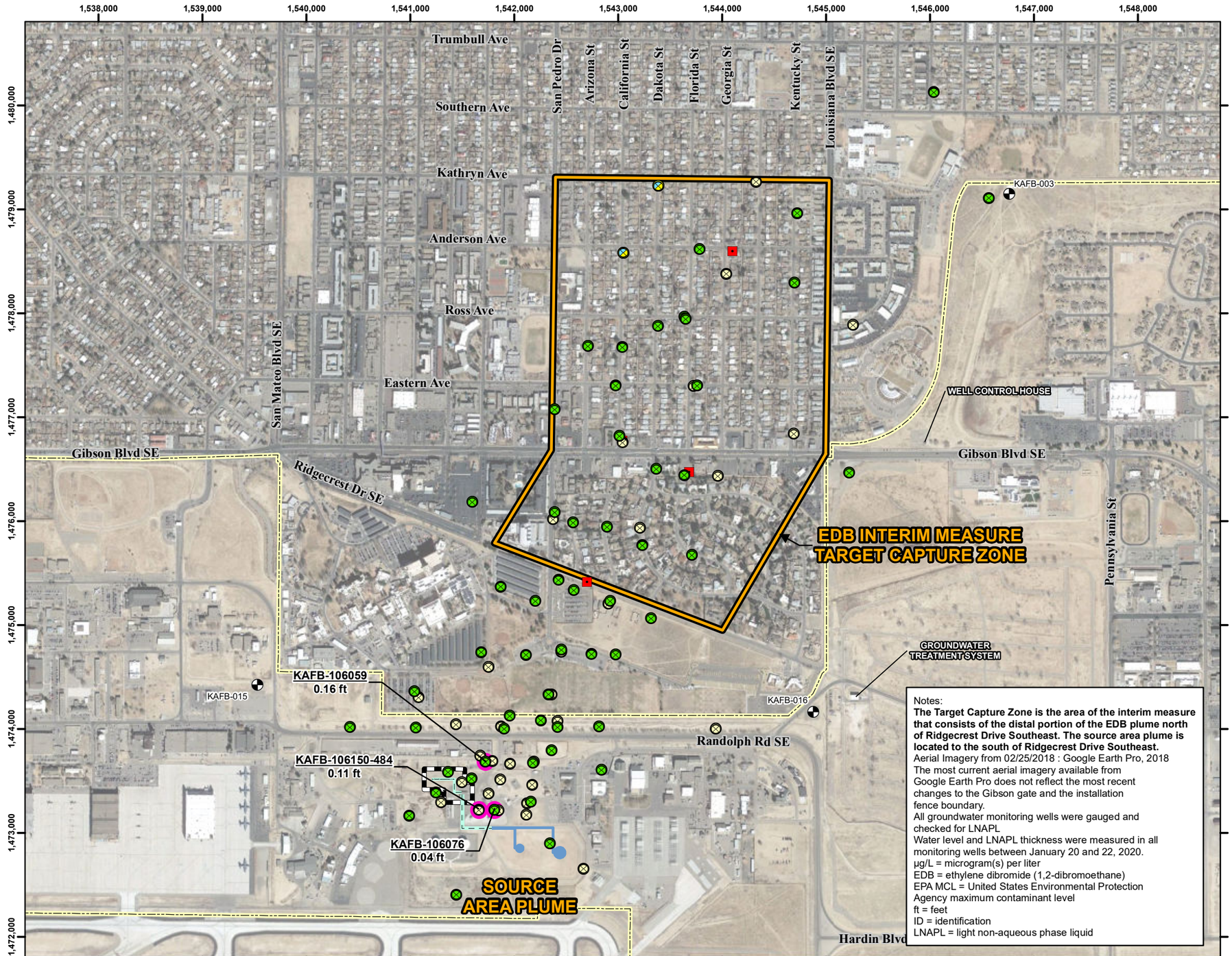
FIGURE 3-4

POTENTIOMETRIC SURFACE MAP OF REFERENCE ELEVATION INTERVAL 4814, JANUARY 20 - 22, 2020

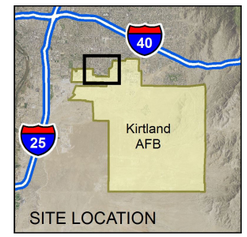
P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 3\3-4 Interval 4814 PotentiometricSurface.mxd 5/27/2020 EA ecarpio



Legend

- Monitoring Well with Confirmed LNAPL
- Reference Elevation Interval 4857 Groundwater Monitoring Wells with top of screen unsubmerged
- Reference Elevation Interval 4857 and 4857/4838 Groundwater Monitoring Wells 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 Line
- Installation Fence Boundary
- Target Capture Zone for Dissolved-Phase EDB
- 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

Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
All groundwater monitoring wells were gauged and checked for LNAPL
Water level and LNAPL thickness were measured in all monitoring wells between January 20 and 22, 2020.
µg/L = microgram(s) per liter
EDB = ethylene dibromide (1,2-dibromoethane)
EPA MCL = United States Environmental Protection Agency maximum contaminant level
ft = feet
ID = identification
LNAPL = light non-aqueous phase liquid

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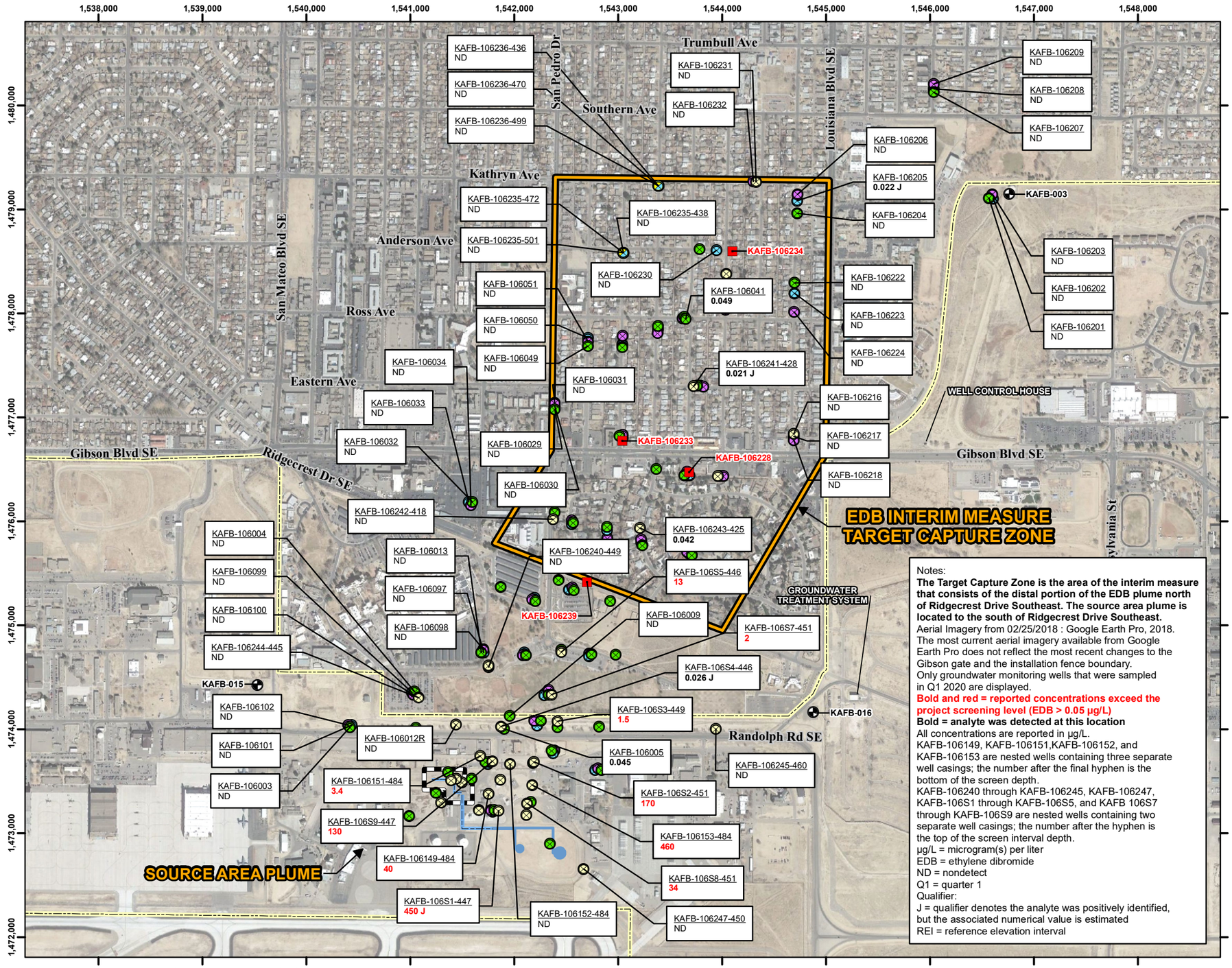
FIGURE 3-5

GROUNDWATER MONITORING WELLS WITH MEASURABLE LNAPL JANUARY 20 - 22, 2020

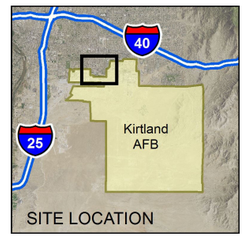
P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 3\3-5 GWM with Measurable LNAPL.mxd 5/24/2020 EA ecarpio



Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
Only groundwater monitoring wells that were sampled in Q1 2020 are displayed.
Bold and red = reported concentrations exceed the project screening level (EDB > 0.05 µg/L)
Bold = analyte was detected at this location
All concentrations are reported in µg/L.
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 interval depth.
µg/L = microgram(s) per liter
EDB = 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 Wells with top of screen unsubmerged
- REI 4857 and REI 4857/4838 Groundwater Monitoring Wells with fully submerged screens
- REI 4838 Groundwater Monitoring Wells
- REI 4814 Groundwater Monitoring Wells
- Nested Groundwater Monitoring Well
- Drinking Water Supply Well
- Extraction Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Source Area
- Target Capture Zone for Dissolved-Phase EDB



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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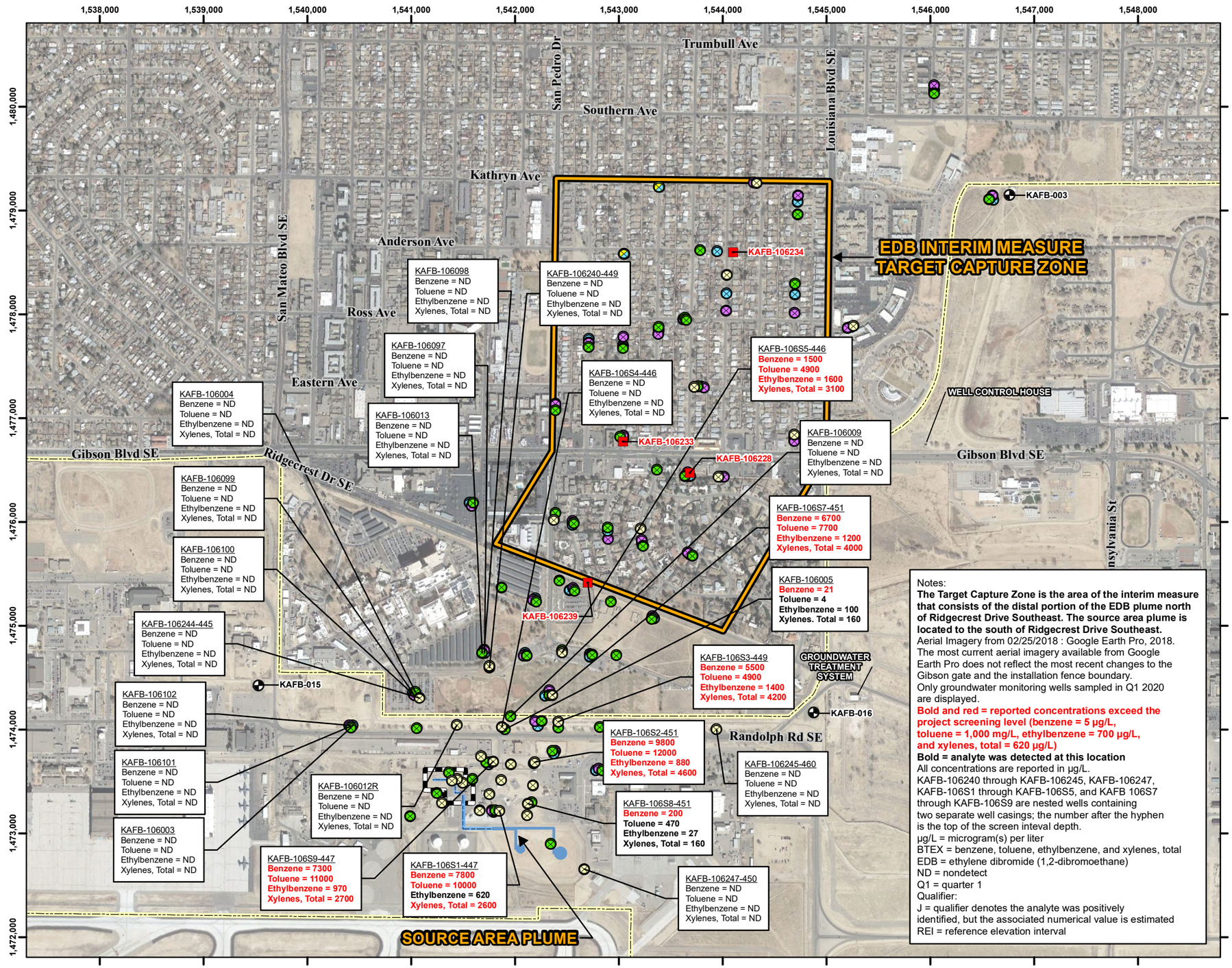
FIGURE 3-6

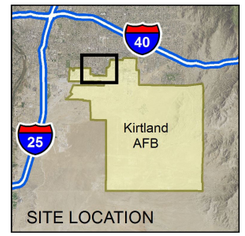
EDB CONCENTRATIONS, Q1 2020

P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 3\3-6 EDB.mxd 4/8/2020 EA ecarpio



Legend

- REI 4857 Groundwater Monitoring Wells with top of screen unsubmerged
- REI 4857 and REI 4857/4838 Groundwater Monitoring Wells with fully submerged screens
- REI 4838 Groundwater Monitoring Wells
- REI 4814 Groundwater Monitoring Wells
- Nested Groundwater Monitoring Well
- Drinking Water Supply Well
- Extraction Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Source Area
- Target Capture Zone for Dissolved-Phase EDB



Notes:

The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
Only groundwater monitoring wells sampled in Q1 2020 are displayed.

Bold and red = reported concentrations exceed the project screening level (benzene = 5 µg/L, toluene = 1,000 mg/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 inteval depth.
µg/L = microgram(s) per liter
BTEX = benzene, toluene, ethylbenzene, and xylenes, total
EDB = ethylene dibromide (1,2-dibromoethane)
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

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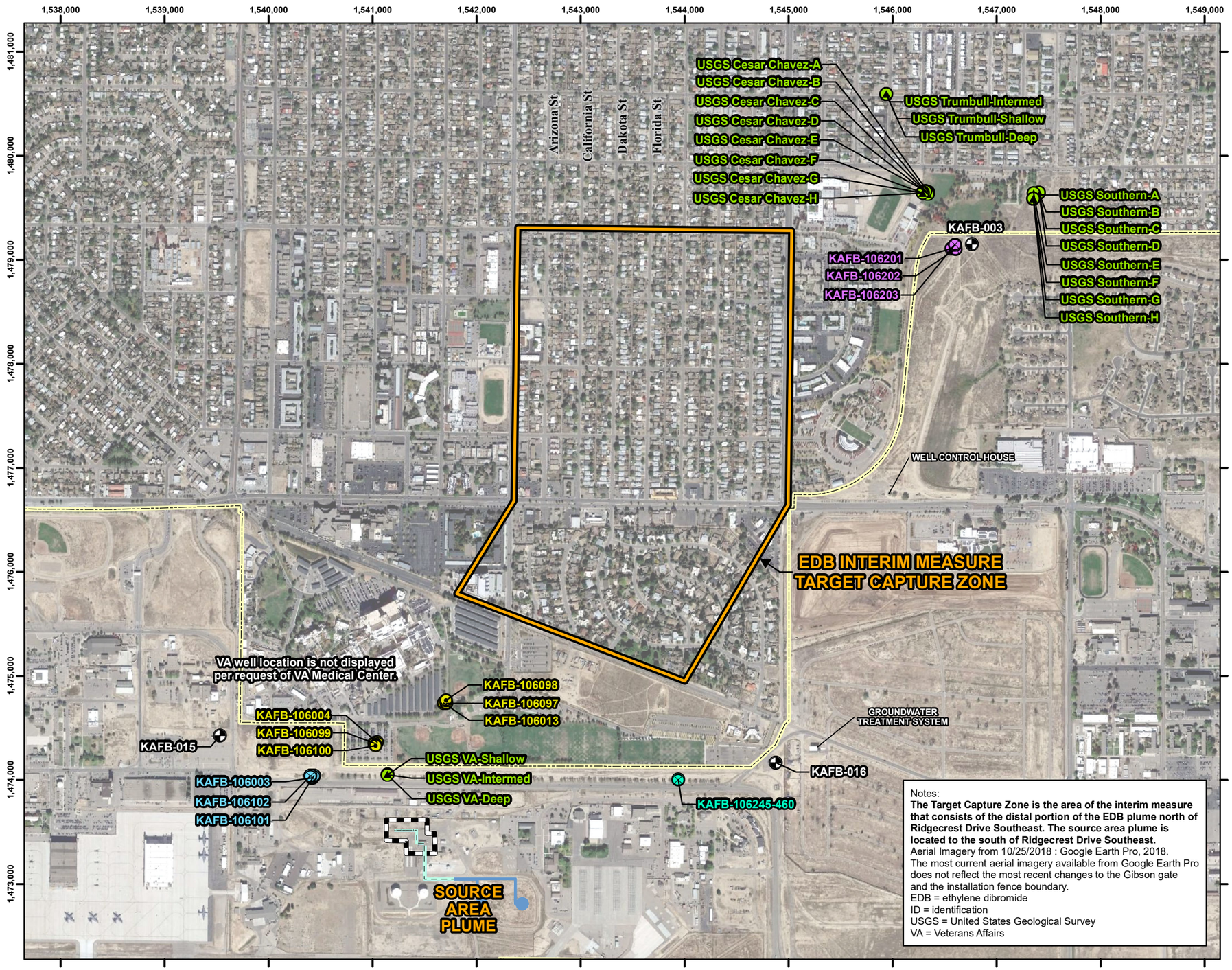
FIGURE 3-7

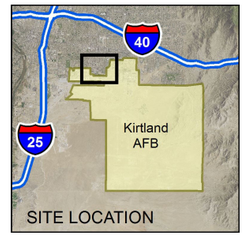
BTEX CONCENTRATIONS, Q1 2020

P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 3\3-7 BTEX.mxd 4/15/2020 EA ecarpio



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
- Source Area
- Target Capture Zone for Dissolved-Phase EDB



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Target Capture Zone is the area of the interim measure that 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 10/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
EDB = ethylene dibromide
ID = identification
USGS = United States Geological Survey
VA = Veterans Affairs

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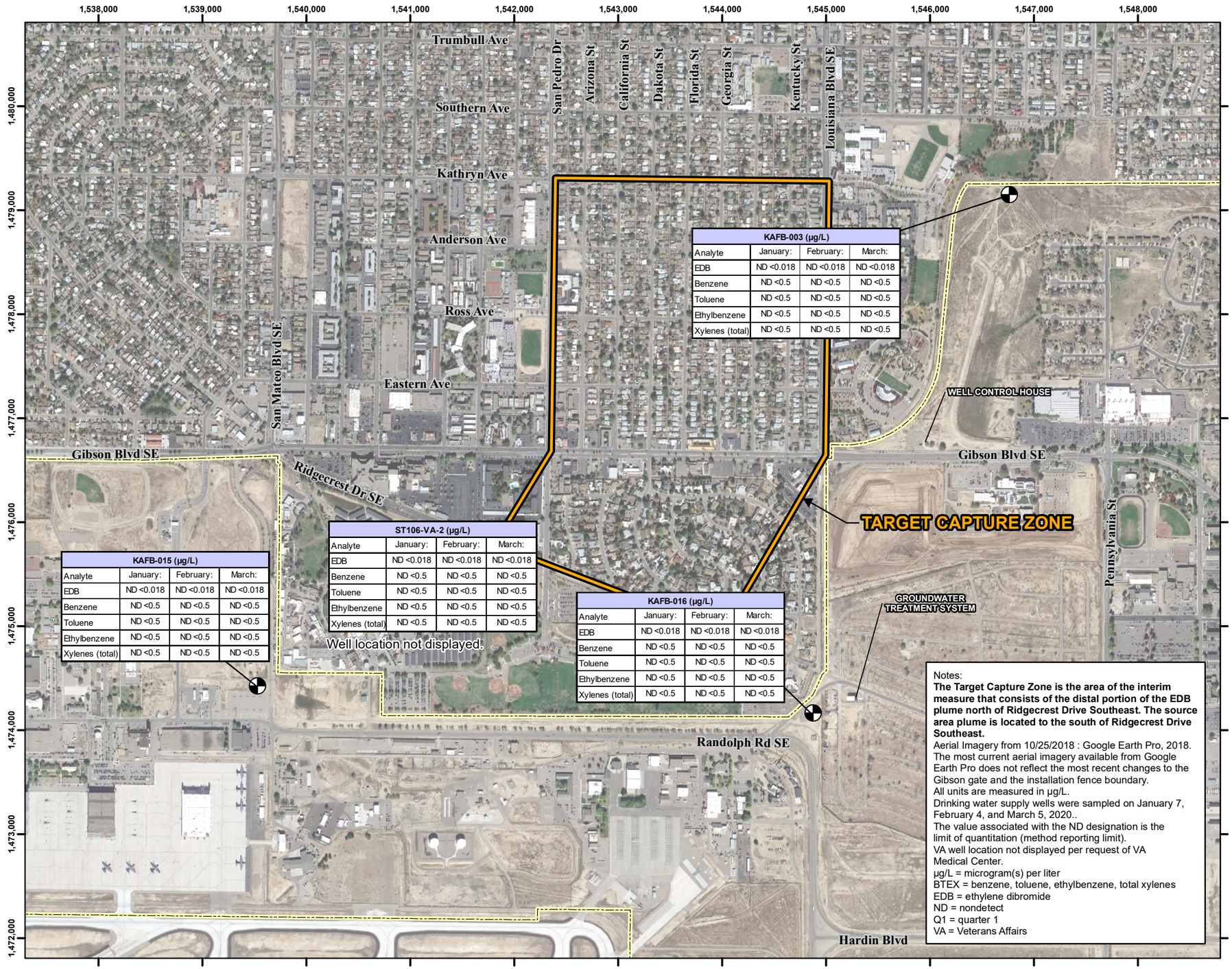
FIGURE 3-8

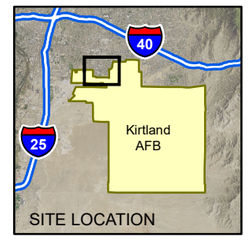
SENTINEL WELL LOCATIONS

P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 3\3-8_SENTINEL_WELL_LOCATION_MAP.mxd 4/15/2020 EA ecarpio



Legend

- Drinking Water Supply Wells
- Installation Fence Boundary
- Target Capture Zone for Dissolved-Phase EDB



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

Notes:
The Target Capture Zone is the area of the interim measure that 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 10/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
All units are measured in µg/L.
Drinking water supply wells were sampled on January 7, February 4, and March 5, 2020..
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 = ethylene dibromide
ND = nondetect
Q1 = quarter 1
VA = Veterans Affairs

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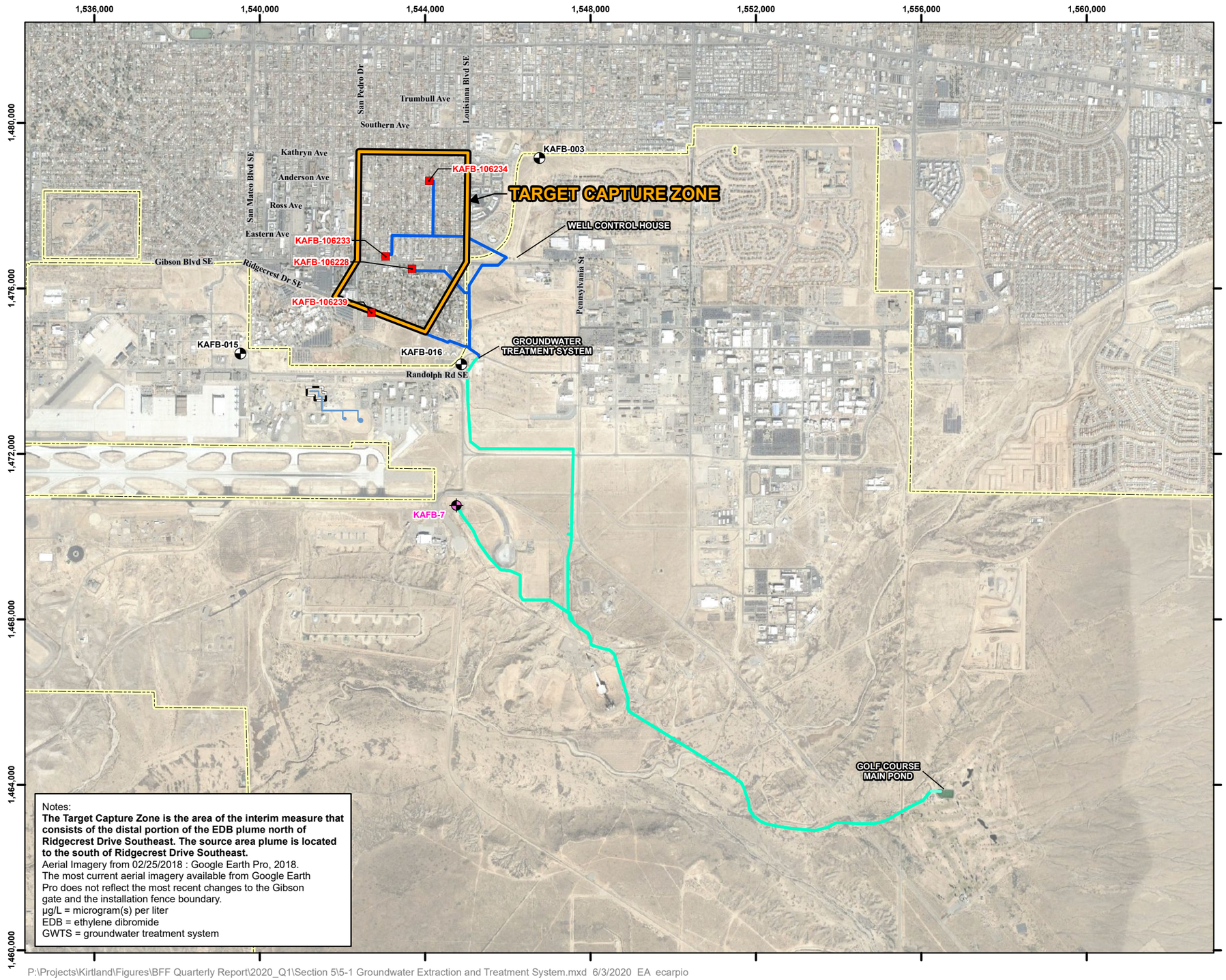
FIGURE 4-1

EDB AND BTEX RESULTS IN DRINKING WATER SUPPLY WELLS, Q1 2020

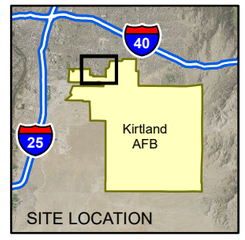
P:\Projects\Kirtland\Figures\Drinking Water Supply Wells\Quarterly Reports 2020\4-1 EDB BTEX Drinking Water Supply Q120.mxd 4/8/2020 EA ecarpio



Notes:
The Target Capture Zone is the area of the interim measure that 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 02/25/2018 : Google Earth Pro, 2018.
The most current aerial imagery available from Google Earth Pro does not reflect the most recent changes to the Gibson gate and the installation fence boundary.
µg/L = microgram(s) per liter
EDB = ethylene dibromide
GWTS = groundwater treatment system

Legend

- Injection Well
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Fuel Transfer Line
- GWTS Influent Piping
- GWTS Effluent Piping
- Installation Fence Boundary
- Target Capture Zone for Dissolved-Phase EDB
- Source Area



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

P:\Projects\Kirtland\Figures\BFF Quarterly Report\2020_Q1\Section 5\5-1 Groundwater Extraction and Treatment System.mxd 6/3/2020 EA ecarpio

TABLES

Table 3-1
Groundwater Monitoring Program

Well Location ID	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]
Newly Added Wells[b]					
KAFB-106247-450[c]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106S1-447[c]	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]	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]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
Groundwater Monitoring Wells[b]					
KAFB-106001	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	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-015 Sentinel
KAFB-106004	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal
KAFB-106005[c]	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	None	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106009[c]	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[c]	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[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106022[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106023[c]	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[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106026[d]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	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	None	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106029[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106030[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106031[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106032[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106033[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106034[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106035[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well

Table 3-1
Groundwater Monitoring Program

Well Location ID	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-106036[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well
KAFB-106037[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring; Groundwater well paired with KAFB-106228 extraction well
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-106041[c]	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106042[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106043[c]	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[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106050[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106051[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106052[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106053[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106054[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106055[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106057[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106058[c]	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[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106071[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106072[c]	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[c]	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

Well Location ID	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-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[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106086[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106087[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106088[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106089[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106090[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106091[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106092[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106093[c]	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[c]	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	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-015 Sentinel
KAFB-106102	BTEX, EDB, FP	BTEX, EDB, metals, anions, alkalinity, FP	BTEX, EDB, FP	EDB, VOCs, metals, anions, alkalinity, FP	VA Proximal, KAFB-015 Sentinel
KAFB-106103[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106104[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106105[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106106[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106107[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106149-484[c]	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106151-484[c]	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106152-484[c]	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106153-484[c]	EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-106201[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106202[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106203[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	KAFB-003 Sentinel
KAFB-106204[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106205[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106206[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106207[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106208[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106209[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106211[e]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106212[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106213[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106214[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106215[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106216[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106217[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106218[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106219[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring

Table 3-1
Groundwater Monitoring Program

Well Location ID	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-106220[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106221[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106222[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106223[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106224[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Downgradient Proximal (Seasonal)
KAFB-106225[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106226[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106227[c]	None	EDB, metals, anions, alkalinity	None	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106229[c,f]	None	EDB	None	EDB	Groundwater well paired with KAFB-106233 extraction well
KAFB-106230[c,d]	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106231[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106232[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-438[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-472[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106235-501[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-436[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-470[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106236-499[c]	EDB	EDB, metals, anions, alkalinity	EDB	EDB, VOCs, metals, anions, alkalinity	Former Downgradient Proximal; Current Upgradient Well
KAFB-106240-449[c]	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]	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106242-418[c]	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106243-425[c]	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Groundwater Monitoring
KAFB-106244-445[c]	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]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	KAFB-016 Sentinel
KAFB-106S2-451[c]	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]	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]	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]	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]	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	BTEX, EDB, metals, anions, alkalinity	EDB, VOCs, metals, anions, alkalinity	Source Area
KAFB-3411	None	EDB, metals, anions, alkalinity, FP	None	EDB, VOCs, metals, anions, alkalinity, FP	Groundwater Monitoring

Table 3-1
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 maximum contaminant level (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 162 wells, 161 wells that are currently sampled under SWMU ST106/SS-111, and one well which will be sampled once water level has risen sufficiently. 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 four quarters of 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 last sampled in Q2 2016, after which it was removed from the groundwater monitoring network due to safety concerns. These concerns were mitigated and the well was sampled for the Q4 2019 sampling event; sampling at this well is considered supplemental to the groundwater monitoring program.

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

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

BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = ethylene dibromide
FP = field parameter
GWM = groundwater monitoring
ID = identification
Q2 = second quarter
Q4 = fourth quarter
SE = Southeast
SWMU = Solid Waste Management Unit
VA = Veterans Affairs
VOC = volatile organic compound

Table 3-2
Groundwater Monitoring Wells Sampled in Q1 2020

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]
Reference Elevation Interval 4857 (ft AMSL) Groundwater Monitoring Wells									
KAFB-106003	4857	1/25/2003	1/17/2020	476-501	4861-4836	Portable pump	Yes	478	BTEX, EDB, FP
KAFB-106004	4857	1/4/2006	1/16/2020	484-509	4859-4834	Portable pump	Yes	486	BTEX, EDB, FP
KAFB-106005	4857	1/22/2007	1/8/2020	479-504	4865-4840	Passive sampler	Yes	483	BTEX, EDB, metals, anions, alkalinity
KAFB-106009	4857	11/28/2007	1/8/2020	480-505	4865-4840	Passive sampler	Yes	484	BTEX, EDB, metals, anions, alkalinity
KAFB-106012R	4857	4/22/2014	1/14/2020	466-495	4877-4847	Portable pump	Yes	468	BTEX, EDB, metals, anions, alkalinity, FP
KAFB-106013	4857	9/19/2008	1/15/2020	487-512	4861-4836	Portable pump	Yes	489	BTEX, EDB, FP
KAFB-106029	4857	6/4/2011	1/6/2020	451-471	4860-4840	Passive sampler	Yes	452	EDB
KAFB-106032	4857	6/24/2011	1/6/2020	456-476	4862-4842	Passive sampler	Yes	457	EDB
KAFB-106041	4857	6/6/2011	1/9/2020	449-469	4875-4855	Passive sampler	Yes	450	EDB, metals, anions, alkalinity
KAFB-106049	4857	5/13/2011	1/8/2020	457-477	4859-4839	Passive sampler	Yes	458	EDB
KAFB-106149-484[h]	4857	9/16/2011	1/9/2020	354-484	4992-4862	Passive sampler	No	472	EDB, metals, anions, alkalinity
KAFB-106151-484	4857	9/30/2011	1/9/2020	355-484	4990-4861	Passive sampler	No	472	EDB, metals, anions, alkalinity
KAFB-106152-484	4857	10/7/2011	1/9/2020	355-484	4992-4863	Passive sampler	No	472	EDB, metals, anions, alkalinity
KAFB-106153-484	4857	10/27/2011	1/9/2020	355-484	4994-4865	Passive sampler	No	475	EDB, metals, anions, alkalinity
KAFB-106201	4857	9/24/2012	1/7/2020	487-517	4867-4837	Passive sampler	Yes	490	EDB
KAFB-106204	4857	8/22/2012	1/8/2020	463-493	4870-4840	Passive sampler	Yes	463	EDB
KAFB-106207	4857	8/22/2012	1/8/2020	473-503	4871-4841	Passive sampler	Yes	474	EDB
KAFB-106216	4857	2/17/2015	1/8/2020	456-486	4878-4848	Passive sampler	No	459	EDB
KAFB-106222	4857	1/15/2015	1/7/2020	458-488	4875-4845	Passive sampler	Yes	459	EDB
KAFB-106231	4857	9/15/2015	1/6/2020	440-475	4888-4853	Passive sampler	No	451	EDB
KAFB-106235-438	4857	10/31/2016	1/6/2020	438-463	4878-4853	Passive sampler	No	441	EDB
KAFB-106236-436	4857	11/23/2016	1/7/2020	436-461	4880-4855	Passive sampler	No	439	EDB
KAFB-106240-449	4857	6/14/2018	1/7/2020	449-489	4899-4859	Passive sampler	No	473	BTEX, EDB, metals, anions, alkalinity
KAFB-106241-428	4857	8/16/2018	1/8/2020	428-468	4896-4856	Passive sampler	No	450	EDB, metals, anions, alkalinity
KAFB-106242-418	4857	8/23/2018	1/6/2020	418-458	4898-4858	Passive sampler	No	442	EDB, metals, anions, alkalinity
KAFB-106243-425	4857	7/27/2018	1/6/2020	425-465	4896-4856	Passive sampler	No	447	EDB, metals, anions, alkalinity
KAFB-106244-445	4857	7/12/2018	1/7/2020	445-485	4898-4858	Passive sampler	No	469	BTEX, EDB, metals, anions, alkalinity
KAFB-106245-460	4857	9/7/2018	1/8/2020	461-501	4897-4857	Passive sampler	No	488	BTEX, EDB, metals, anions, alkalinity
KAFB-106247-450	4857	3/1/2019	1/6/2020	450-490	4898-4858	Passive sampler	No	477	BTEX, EDB, metals, anions, alkalinity
KAFB-106S1-447	4857	2/18/2019	1/9/2020	447-487	4898-4858	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity
KAFB-106S2-451	4857	11/21/2018	1/6/2020	451-491	4898-4858	Passive sampler	No	478	BTEX, EDB, metals, anions, alkalinity
KAFB-106S3-449	4857	11/29/2018	1/9/2020	449-489	4899-4859	Passive sampler	No	476	BTEX, EDB, metals, anions, alkalinity
KAFB-106S4-446	4857	11/16/2018	1/6/2020	446-486	4897-4857	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity
KAFB-106S5-446	4857	11/5/2018	1/9/2020	446-486	4898-4858	Passive sampler	No	470	BTEX, EDB, metals, anions, alkalinity
KAFB-106S7-451[i]	4857	2/4/2019	1/9/2020	451-491	4898-4858	Passive sampler	No	475	BTEX, EDB, metals, anions, alkalinity
KAFB-106S8-451	4857	3/1/2019	1/6/2020	451-491	4897-4857	Passive sampler	No	476	BTEX, EDB, metals, anions, alkalinity
KAFB-106S9-447	4857	11/8/2019	1/9/2020	447-487	4899-4859	Passive sampler	No	471	BTEX, EDB, metals, anions, alkalinity

Table 3-2
Groundwater Monitoring Wells Sampled in Q1 2020

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]
Reference Elevation Interval 4838 (ft AMSL) Groundwater Monitoring Wells									
KAFB-106030	4838	5/25/2011	1/6/2020	470-485	4842-4827	Passive sampler	--	470	EDB
KAFB-106033	4838	6/18/2011	1/6/2020	477-492	4841-4826	Passive sampler	--	478	EDB
KAFB-106050	4838	5/2/2011	1/8/2020	474-489	4841-4826	Passive sampler	--	475	EDB
KAFB-106097	4838	4/27/2011	1/15/2020	506-521	4842-4827	Portable pump	--	508	BTEX, EDB, FP
KAFB-106099	4838	5/12/2011	1/16/2020	501-516	4842-4827	Portable pump	--	503	BTEX, EDB, FP
KAFB-106101	4838	2/21/2011	1/17/2020	496-511	4842-4826	Portable pump	--	498	BTEX, EDB, FP
KAFB-106202	4838	9/23/2012	1/7/2020	517-532	4838-4823	Passive sampler	--	521	EDB
KAFB-106205	4838	8/15/2012	1/8/2020	493-508	4841-4826	Passive sampler	--	493	EDB
KAFB-106208	4838	8/16/2012	1/8/2020	503-518	4841-4826	Passive sampler	--	504	EDB
KAFB-106217	4838	2/17/2015	1/7/2020	485-500	4849-4834	Passive sampler	--	486	EDB
KAFB-106223	4838	2/17/2015	1/7/2020	488-503	4846-4831	Passive sampler	--	489	EDB
KAFB-106235-472	4838	10/31/2016	1/6/2020	472-492	4844-4824	Passive sampler	--	473	EDB
KAFB-106236-470	4838	11/23/2016	1/7/2020	470-490	4846-4826	Passive sampler	--	471	EDB
Reference Elevation Interval 4814 (ft AMSL) Groundwater Monitoring Wells									
KAFB-106031	4814	5/25/2011	1/6/2020	496-510	4815-4802	Passive sampler	--	497	EDB
KAFB-106034	4814	6/24/2011	1/6/2020	502-517	4817-4802	Passive sampler	--	503	EDB
KAFB-106051	4814	4/26/2011	1/8/2020	501-516	4815-4800	Passive sampler	--	502	EDB
KAFB-106098	4814	4/17/2011	1/15/2020	531-546	4817-4802	Portable pump	--	533	BTEX, EDB, FP
KAFB-106100	4814	5/3/2011	1/16/2020	526-541	4817-4802	Portable pump	--	528	BTEX, EDB, FP
KAFB-106102	4814	3/3/2011	1/17/2020	521-535	4816-4803	Portable pump	--	523	BTEX, EDB, FP
KAFB-106203	4814	9/9/2012	1/7/2020	620-635	4734-4719	Passive sampler	--	624	EDB
KAFB-106206	4814	7/16/2012	1/8/2020	594-608	4740-4725	Passive sampler	--	594	EDB
KAFB-106209	4814	8/7/2012	1/8/2020	603-617	4740-4726	Passive sampler	--	604	EDB
KAFB-106218	4814	5/26/2015	1/7/2020	552-567	4782-4767	Passive sampler	--	553	EDB
KAFB-106224	4814	5/22/2015	1/7/2020	555-570	4780-4765	Passive sampler	--	556	EDB
KAFB-106230	4814	9/1/2015	1/7/2020	501-516	4824-4809	Passive sampler	--	502	EDB, metals, anions, alkalinity
KAFB-106232	4814	9/15/2015	1/6/2020	503-518	4824-4809	Passive sampler	--	504	EDB
KAFB-106235-501	4814	10/31/2016	1/6/2020	501-521	4815-4795	Passive sampler	--	502	EDB
KAFB-106236-499	4814	11/23/2016	1/7/2020	499-519	4817-4797	Passive sampler	--	500	EDB

Table 3-2
Groundwater Monitoring Wells Sampled in Q1 2020

[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 water table rise. Well screens in REI 4838 and 4814 wells were designed with the screened interval fully submerged to capture conditions at depths below the water table.
[d] Portable pump sampling depth is 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 to the nearest foot 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 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] During sampling on January 9, 2020, there was a failure in the sleeve around the passive sampler that resulted in insufficient sample volume for a full suite of analytes. Samples were collected for EDB, dissolved metals, and total metals.
[i] During sampling on January 9, 2020, there was a failure in the sleeve around the passive sampler that resulted in insufficient sample volume for a full suite of analytes. Samples were collected for dissolved metals, nitrate/nitrite, and reduced volume aliquots for EDB
-- = Well was designed with the screened interval fully submerged to capture conditions at depths below the water table
AMSL = above mean sea level
bgs = below ground surface
EDB = ethylene dibromide (1,2-dibromoethane)
ERPIMS = Environmental Resources Program Information Management System
FP = field parameter
ft = foot/feet
ID = identification
NA = not applicable
NMOSE = New Mexico Office of the State Engineer
REI = reference elevation interval
VOC = volatile organic compound

Table 3-3
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2020

Well Location ID	Reference Elevation Interval (ft AMSL)	Date of Measurement	MRP Elevation (ft AMSL)	Top of Screen (ft AMSL)	Depth to LNAPL[a] (ft MRP)	Depth to Water[a] (ft MRP)	Screen Submergence Depth[b] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[c] (ft AMSL)
KAFB-106001[d]	4857/4838	1/20/2020	5344.90	4859	—	467.98	17.92	—	—	4876.92
KAFB-106002	4857	1/21/2020	5342.24	4861	—	464.67	16.57	—	—	4877.57
KAFB-106003	4857	1/21/2020	5340.28	4861	—	462.81	16.47	—	—	4877.47
KAFB-106004	4857	1/20/2020	5345.81	4859	—	468.41	18.40	—	—	4877.40
KAFB-106005	4857	1/22/2020	5346.91	4865	—	469.40	12.51	—	—	4877.51
KAFB-106006	4857	1/22/2020	5351.48	4865	—	474.28	12.20	—	—	4877.20
KAFB-106007	4857	1/20/2020	5349.60	4861	—	472.86	15.74	—	—	4876.74
KAFB-106008	4857	1/22/2020	5351.77	4863	—	474.50	14.27	—	—	4877.27
KAFB-106009	4857	1/21/2020	5348.55	4865	—	471.24	12.31	—	—	4877.31
KAFB-106010	4857	1/22/2020	5343.26	4860	—	466.02	17.24	—	—	4877.24
KAFB-106011	4857	1/21/2020	5353.15	4864	—	476.05	13.10	—	—	4877.10
KAFB-106012R	4857	1/21/2020	5345.00	4877	—	467.83	0.17	—	—	4877.17
KAFB-106013	4857	1/21/2020	5350.62	4861	—	473.23	16.39	—	—	4877.39
KAFB-106014	4857	1/21/2020	5350.22	4861	—	473.09	16.13	—	—	4877.13
KAFB-106015[d]	4857/4838	1/22/2020	5342.44	4855	—	465.04	22.40	—	—	4877.40
KAFB-106016	4857	1/20/2020	5342.43	4864	—	465.52	12.90	—	—	4876.91
KAFB-106017[d]	4857/4838	1/21/2020	5342.52	4857	—	465.61	19.91	—	—	4876.91
KAFB-106018[d]	4857/4838	1/20/2020	5336.31	4857	—	459.43	19.88	—	—	4876.88
KAFB-106019[d]	4857/4838	1/21/2020	5354.62	4859	—	477.65	17.97	—	—	4876.97
KAFB-106020	4857	1/20/2020	5341.05	4859	—	463.81	18.23	—	—	4877.24
KAFB-106021[d]	4857/4838	1/21/2020	5314.33	4856	—	436.96	21.37	—	—	4877.37
KAFB-106022[d]	4857/4838	1/21/2020	5318.06	4856	—	440.79	21.27	—	—	4877.27
KAFB-106023	4857	1/22/2020	5328.76	4856	—	451.51	21.25	—	—	4877.25
KAFB-106024	4857	1/20/2020	5343.55	4863	—	466.65	13.90	—	—	4876.90
KAFB-106025[d]	4857/4838	1/21/2020	5317.28	4852	—	439.56	25.72	—	—	4877.72
KAFB-106026	4857	1/21/2020	5322.68	4857	—	444.66	21.02	—	—	4878.02
KAFB-106027	4857	1/20/2020	5348.62	4864	—	471.81	12.81	—	—	4876.81
KAFB-106028	4857	1/22/2020	5348.89	4863	—	471.68	14.21	—	—	4877.21
KAFB-106029	4857	1/21/2020	5310.94	4860	—	433.10	17.84	—	—	4877.84
KAFB-106030	4838	1/21/2020	5311.03	4842	—	433.20	--	—	—	4877.83
KAFB-106031	4814	1/21/2020	5311.06	4815	—	433.24	--	—	—	4877.82
KAFB-106032	4857	1/21/2020	5317.60	4862	—	439.88	15.72	—	—	4877.72
KAFB-106033	4838	1/21/2020	5317.76	4841	—	440.03	--	—	—	4877.73
KAFB-106034	4814	1/21/2020	5318.63	4817	—	440.88	--	—	—	4877.75
KAFB-106035	4857	1/22/2020	5321.58	4869	—	444.77	7.81	—	—	4876.81
KAFB-106036	4838	1/22/2020	5321.85	4840	—	445.22	--	—	—	4876.63
KAFB-106037	4838	1/22/2020	5322.10	4815	—	445.87	--	—	—	4876.23
KAFB-106038	4857	1/21/2020	5351.61	4870	—	474.52	7.09	—	—	4877.09
KAFB-106039	4838	1/21/2020	5351.32	4840	—	474.30	--	—	—	4877.02
KAFB-106040	4814	1/21/2020	5350.26	4817	—	473.20	--	—	—	4877.06
KAFB-106041	4857	1/20/2020	5324.35	4875	—	446.85	2.50	—	—	4877.50
KAFB-106042	4857	1/20/2020	5324.07	4855	—	446.61	22.46	—	—	4877.46
KAFB-106043	4814	1/20/2020	5324.30	4781	—	446.84	--	—	—	4877.46
KAFB-106044	4838	1/20/2020	5348.79	4841	—	471.96	--	—	—	4876.83
KAFB-106045	4814	1/20/2020	5348.52	4817	—	471.65	--	—	—	4876.87
KAFB-106046	4857	1/20/2020	5352.84	4863	—	475.63	14.21	—	—	4877.21
KAFB-106047	4838	1/20/2020	5352.81	4841	—	476.14	--	—	—	4876.67
KAFB-106048	4814	1/20/2020	5352.58	4817	—	475.88	--	—	—	4876.70
KAFB-106049	4857	1/21/2020	5316.10	4859	—	438.08	19.02	—	—	4878.02
KAFB-106050	4838	1/21/2020	5315.51	4841	—	437.50	--	—	—	4878.01

Table 3-3
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2020

Well Location ID	Reference Elevation Interval (ft AMSL)	Date of Measurement	MRP Elevation (ft AMSL)	Top of Screen (ft AMSL)	Depth to LNAPL[a] (ft MRP)	Depth to Water[a] (ft MRP)	Screen Submergence Depth[b] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[c] (ft AMSL)
KAFB-106051	4814	1/21/2020	5315.78	4815	—	437.80	--	—	—	4877.98
KAFB-106052	4857	1/21/2020	5318.86	4869	—	441.15	8.71	—	—	4877.71
KAFB-106053	4838	1/21/2020	5318.67	4840	—	441.06	--	—	—	4877.61
KAFB-106054	4814	1/21/2020	5318.38	4814	—	440.66	--	—	—	4877.72
KAFB-106055	4857	1/21/2020	5325.09	4859	—	447.53	18.56	—	—	4877.56
KAFB-106057	4838	1/21/2020	5325.46	4841	—	447.89	--	—	—	4877.57
KAFB-106058	4814	1/21/2020	5326.05	4814	—	448.44	--	—	—	4877.61
KAFB-106059	4857	1/20/2020	5347.87	4861	470.94	471.10	15.89	0.16	4876.93	4876.89
KAFB-106060	4838	1/20/2020	5345.32	4842	—	468.54	--	—	—	4876.78
KAFB-106061	4814	1/20/2020	5345.43	4772	—	468.52	--	—	—	4876.91
KAFB-106062	4814	1/20/2020	5351.20	4773	—	474.31	--	—	—	4876.89
KAFB-106063[e]	4838	3/11/2020	5351.86	4844	—	474.18	--	—	—	4877.68
KAFB-106064[e]	4857	3/11/2020	5351.08	4863	—	473.35	14.73	—	—	4877.73
KAFB-106065	4838	1/22/2020	5348.76	4841	—	471.75	--	—	—	4877.01
KAFB-106066	4814	1/22/2020	5349.09	4773	—	471.75	--	—	—	4877.34
KAFB-106067	4857	1/21/2020	5347.50	4862	—	470.60	14.90	—	—	4876.90
KAFB-106068	4814	1/21/2020	5347.23	4767	—	470.30	--	—	—	4876.93
KAFB-106069	4838	1/21/2020	5347.25	4841	—	470.20	--	—	—	4877.05
KAFB-106070	4857	1/22/2020	5318.54	4859	—	441.44	18.10	—	—	4877.10
KAFB-106071	4814	1/22/2020	5320.90	4773	—	443.68	--	—	—	4877.22
KAFB-106072	4838	1/22/2020	5319.29	4844	—	441.98	--	—	—	4877.31
KAFB-106073	4838	1/20/2020	5339.87	4840	—	462.68	--	—	—	4877.19
KAFB-106074	4814	1/20/2020	5340.59	4771	—	463.40	--	—	—	4877.19
KAFB-106075	4857	1/20/2020	5340.50	4860	—	463.40	17.10	—	—	4877.10
KAFB-106076	4857	1/22/2020	5344.92	4865	467.84	467.88	12.07	0.04	4877.08	4877.07
KAFB-106077	4838	1/21/2020	5344.72	4841	—	469.08	--	—	—	4875.64
KAFB-106078	4814	1/21/2020	5344.60	4771	—	468.22	--	—	—	4876.38
KAFB-106079	4857	1/22/2020	5349.67	4863	—	472.55	14.12	—	—	4877.12
KAFB-106080	4838	1/22/2020	5348.48	4843	—	471.14	--	—	—	4877.34
KAFB-106081	4814	1/21/2020	5349.48	4772	—	472.37	--	—	—	4877.11
KAFB-106082	4857	1/20/2020	5335.26	4863	—	458.61	13.65	—	—	4876.65
KAFB-106083	4838	1/20/2020	5335.04	4840	—	458.28	--	—	—	4876.76
KAFB-106084	4814	1/20/2020	5337.94	4768	—	460.99	--	—	—	4876.95
KAFB-106085	4857	1/22/2020	5317.23	4871	—	439.86	6.37	—	—	4877.37
KAFB-106086	4838	1/22/2020	5317.65	4842	—	440.25	--	—	—	4877.40
KAFB-106087	4814	1/22/2020	5316.87	4771	—	439.42	--	—	—	4877.45
KAFB-106088	4857	1/22/2020	5324.27	4864	—	447.18	13.09	—	—	4877.09
KAFB-106089	4838	1/22/2020	5323.54	4842	—	446.89	--	—	—	4876.65
KAFB-106090	4814	1/22/2020	5322.85	4768	—	445.68	--	—	—	4877.17
KAFB-106091	4857	1/21/2020	5314.33	4860	—	436.79	17.54	—	—	4877.54
KAFB-106092	4838	1/21/2020	5314.51	4841	—	436.90	--	—	—	4877.61
KAFB-106093	4814	1/21/2020	5314.62	4771	—	436.99	--	—	—	4877.63
KAFB-106094	4857	1/21/2020	5345.07	4861	—	467.81	16.26	—	—	4877.26
KAFB-106095	4838	1/21/2020	5344.66	4841	—	467.36	--	—	—	4877.30
KAFB-106096	4814	1/21/2020	5345.31	4769	—	468.00	--	—	—	4877.31
KAFB-106097	4838	1/21/2020	5347.74	4842	—	470.16	--	—	—	4877.58
KAFB-106098	4814	1/21/2020	5347.83	4817	—	470.24	--	—	—	4877.59
KAFB-106099	4838	1/20/2020	5342.85	4842	—	465.38	--	—	—	4877.47
KAFB-106100	4814	1/20/2020	5342.85	4817	—	465.40	--	—	—	4877.45
KAFB-106101	4838	1/21/2020	5340.32	4842	—	462.89	--	—	—	4877.43
KAFB-106102	4814	1/21/2020	5340.32	4816	—	463.03	--	—	—	4877.29

Table 3-3
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2020

Well Location ID	Reference Elevation Interval (ft AMSL)	Date of Measurement	MRP Elevation (ft AMSL)	Top of Screen (ft AMSL)	Depth to LNAPL[a] (ft MRP)	Depth to Water[a] (ft MRP)	Screen Submergence Depth[b] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[c] (ft AMSL)
KAFB-106103	4838	1/22/2020	5328.44	4843	—	451.74	--	—	—	4876.70
KAFB-106104	4814	1/22/2020	5328.08	4818	—	451.21	--	—	—	4876.87
KAFB-106105	4838	1/21/2020	5321.96	4838	—	444.41	--	—	—	4877.55
KAFB-106106	4857	1/21/2020	5321.80	4868	—	444.28	9.52	—	—	4877.52
KAFB-106107	4814	1/21/2020	5322.12	4812	—	444.52	--	—	—	4877.60
KAFB-106148-484[f]	4857	1/22/2020	5344.24	4990	—	467.11	-113.11	—	—	4877.13
KAFB-106149-484[f]	4857	1/22/2020	5345.94	4992	—	469.08	-115.14	—	—	4876.86
KAFB-106150-484[f]	4857	1/22/2020	5344.10	4989	467.36	467.47	-112.29	0.11	4876.74	4876.71
KAFB-106151-484[f]	4857	1/20/2020	5345.49	4990	—	469.03	-113.54	—	—	4876.46
KAFB-106152-484[f]	4857	1/22/2020	5347.68	4992	—	470.63	-114.95	—	—	4877.05
KAFB-106153-484[f]	4857	1/22/2020	5348.99	4994	—	472.07	-117.08	—	—	4876.92
KAFB-106154-484[f]	4857	1/22/2020	5347.34	4992	—	470.27	-114.93	—	—	4877.07
KAFB-106155-484[f]	4857	1/22/2020	5347.13	4992	—	470.64	-115.51	—	—	4876.49
KAFB-106156-484[f]	4857	1/20/2020	5341.19	4996	—	464.19	-119.00	—	—	4877.00
KAFB-106201	4857	1/21/2020	5357.00	4867	—	479.31	10.69	—	—	4877.69
KAFB-106202	4838	1/21/2020	5357.80	4838	—	480.37	--	—	—	4877.43
KAFB-106203	4814	1/21/2020	5357.52	4734	—	480.77	--	—	—	4876.75
KAFB-106204	4857	1/20/2020	5332.86	4870	—	454.85	8.01	—	—	4878.01
KAFB-106205	4838	1/20/2020	5333.29	4841	—	455.21	--	—	—	4878.08
KAFB-106206	4814	1/20/2020	5333.46	4740	—	455.33	--	—	—	4878.13
KAFB-106207	4857	1/20/2020	5344.20	4871	—	465.41	7.78	—	—	4878.79
KAFB-106208	4838	1/20/2020	5343.85	4841	—	465.11	--	—	—	4878.74
KAFB-106209	4814	1/20/2020	5343.38	4740	—	464.47	--	—	—	4878.91
KAFB-106211[f]	4857	1/21/2020	5342.51	4905	—	465.49	-27.98	—	—	4877.02
KAFB-106212	4814	1/22/2020	5321.80	4779	—	445.43	--	—	—	4876.37
KAFB-106213	4857	1/22/2020	5325.19	4877	—	448.24	-0.05	—	—	4876.95
KAFB-106214	4838	1/22/2020	5325.45	4847	—	448.28	--	—	—	4877.17
KAFB-106215	4814	1/22/2020	5325.77	4779	—	448.51	--	—	—	4877.26
KAFB-106216	4857	1/20/2020	5333.91	4878	—	456.91	-1.00	—	—	4877.00
KAFB-106217	4838	1/20/2020	5333.85	4849	—	456.81	--	—	—	4877.04
KAFB-106218	4814	1/20/2020	5333.64	4782	—	456.95	--	—	—	4876.69
KAFB-106219	4857	1/20/2020	5340.41	4878	—	462.77	-0.36	—	—	4877.64
KAFB-106220	4838	1/20/2020	5340.34	4847	—	462.74	--	—	—	4877.60
KAFB-106221	4814	1/20/2020	5340.10	4779	—	462.53	--	—	—	4877.57
KAFB-106222	4857	1/20/2020	5333.24	4875	—	455.74	2.50	—	—	4877.50
KAFB-106223	4838	1/20/2020	5333.96	4846	—	456.46	--	—	—	4877.50
KAFB-106224	4814	1/20/2020	5335.08	4780	—	457.60	--	—	—	4877.48
KAFB-106225	4857	1/20/2020	5326.36	4876	—	449.32	1.04	—	—	4877.04
KAFB-106226	4838	1/20/2020	5327.31	4847	—	449.94	--	—	—	4877.37
KAFB-106227	4814	1/20/2020	5328.09	4780	—	450.69	--	—	—	4877.40
KAFB-106229[d,f]	4857/4838	1/22/2020	5314.31	4883	—	436.71	-5.40	—	—	4877.60
KAFB-106230	4814	1/21/2020	5324.51	4824	—	446.76	--	—	—	4877.75
KAFB-106231	4857	1/21/2020	5327.56	4888	—	449.17	-9.61	—	—	4878.39
KAFB-106232	4814	1/21/2020	5327.20	4824	—	448.69	--	—	—	4878.51
KAFB-106235-438	4857	1/20/2020	5315.67	4878	—	438.48	-0.81	—	—	4877.19
KAFB-106235-472	4838	1/20/2020	5315.67	4844	—	438.44	--	—	—	4877.23
KAFB-106235-501	4814	1/20/2020	5315.67	4815	—	438.46	--	—	—	4877.21
KAFB-106236-436	4857	1/20/2020	5316.02	4880	—	438.15	-2.13	—	—	4877.87
KAFB-106236-470	4838	1/20/2020	5316.02	4846	—	438.13	--	—	—	4877.89

Table 3-3
Groundwater Elevation and Light Non-Aqueous Phase Liquid Thickness, Q1 2020

Well Location ID	Reference Elevation Interval (ft AMSL)	Date of Measurement	MRP Elevation (ft AMSL)	Top of Screen (ft AMSL)	Depth to LNAPL[a] (ft MRP)	Depth to Water[a] (ft MRP)	Screen Submergence Depth[b] (ft)	Measured LNAPL Thickness (ft)	LNAPL Elevation (ft AMSL)	Groundwater Elevation Corrected for LNAPL Thickness[c] (ft AMSL)
KAFB-106236-499	4814	1/20/2020	5316.02	4817	—	438.15	--	—	—	4877.87
KAFB-106240-449	4857	1/21/2020	5347.57	4899	—	470.21	-21.64	—	—	4877.36
KAFB-106241-428	4857	1/21/2020	5324.06	4896	—	447.15	-19.09	—	—	4876.91
KAFB-106242-418	4857	1/21/2020	5316.15	4898	—	438.88	-20.73	—	—	4877.27
KAFB-106243-425	4857	1/22/2020	5320.57	4896	—	443.46	-18.89	—	—	4877.11
KAFB-106244-445	4857	1/20/2020	5343.51	4898	—	466.14	-20.63	—	—	4877.37
KAFB-106245-460	4857	1/22/2020	5360.90	4897	—	484.11	-20.21	—	—	4876.79
KAFB-106247-450	4857	1/20/2020	5351.60	4901	—	474.85	-24.25	—	—	4876.75
KAFB-106S1-447	4857	1/22/2020	5345.22	4898	—	468.01	-20.79	—	—	4877.21
KAFB-106S2-451	4857	1/22/2020	5352.40	4898	—	475.22	-20.82	—	—	4877.18
KAFB-106S3-449	4857	1/22/2020	5351.01	4899	—	474.31	-22.30	—	—	4876.70
KAFB-106S4-446	4857	1/22/2020	5346.57	4898	—	469.13	-20.56	—	—	4877.44
KAFB-106S5-446	4857	1/22/2020	5343.58	4898	—	466.30	-20.72	—	—	4877.28
KAFB-106S7-451	4857	1/22/2020	5348.88	4898	—	471.78	-20.90	—	—	4877.10
KAFB-106S8-451	4857	1/22/2020	5351.45	4900	—	474.30	-22.85	—	—	4877.15
KAFB-106S9-447	4857	1/20/2020	5345.82	4899	—	469.30	-22.48	—	—	4876.52
KAFB-3411	4857	1/20/2020	5343.49	4863	—	466.59	13.90	—	—	4876.90

[a] See appendix table E-2-1 for corrections to water level and LNAPL depths based on interface probe calibration.

[b] Screen submergence depth is calculated for wells which intersected the water table when they were installed; those located in REI 4857 and 4857/4838. It is 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.

[c] 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.

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

[e] Well was not gauged in January due to presence of monitoring equipment. Gauging occurred prior to sampling in March and is presented here for informational purposes only. Data was not used in the creation of potentiometric surface maps.

[f] Well not permanently designated in REI listed.

AMSL = above mean sea level
ft = foot/feet
ID = identification
JP = jet propellant
LNAPL = light non-aqueous phase liquid
MRP = measurement reference point
NA = not applicable
Q1 = first quarter
REI = reference elevation interval
-- = Well was designed with the screened interval fully submerged to capture conditions at depths below the water table
— = LNAPL not detected

Table 3-4
Groundwater Analytical Results for Newly Added Wells, Q1 2020

							Well Location ID:	KAFB-106247-450			KAFB-106S1-447			KAFB-106S7-451			KAFB-106S8-451		
							Field Sample ID:	GW247-450-201			GWS1-447-201			GWS7-451-201			GWS8-451-201		
							Sample Date:	1/6/2020			1/9/2020			1/9/2020			1/6/2020		
							Sample Type:	REG			REG			REG			REG		
							Sample Depth (ft bgs):	477.42			471.12			475.1			478.32		
							Reference Elevation Interval (ft AMSL):	4857			4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**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	**450**	J	95	**2**	--	0.38	**34**	--	9.4
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	**7,800**	--	50	**6,700**	--	50	**200**	--	0.5
		Ethylbenzene	750	700	15	700	ND	U	0.8	620	--	8	**1,200**	--	8	27	--	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	**10,000**	--	50	**7,700**	--	50	470	--	5
		Xylenes, total	620	10,000	190	620	ND	U	2	**2,600**	--	20	**4,000**	--	20	160	--	2
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	42.7	--	0.15	91.5	--	0.15	—	—	—	100	--	0.15
		Iron	1.0	NS	NS	1.0	ND	U	0.103	**1.02**	--	0.103	**6.82**	--	0.103	**12.6**	--	0.103
		Magnesium	NS	NS	NS	NS	6.2	--	0.0751	15	--	0.0751	—	—	—	15.3	--	0.0751
		Manganese	0.2	NS	NS	0.2	0.0929	--	0.0052	**2.76**	--	0.0052	**5.58**	--	0.0052	**1.75**	--	0.0052
		Potassium	NS	NS	NS	NS	2.41	--	0.375	3.12	--	0.375	—	—	—	3.34	--	0.375
		Sodium	NS	NS	NS	NS	24.9	--	0.5	30.1	--	0.5	—	—	—	31.9	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00071	J	0.0016	0.0028	--	0.0016	—	—	—	0.0032	--	0.0016
		Lead	0.015	0.015	0.015	0.015	0.000095	J	0.00025	0.00014	J	0.00025	—	—	—	0.00028	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2	ND	U	2	—	—	—	ND	U	2
		Chloride	250	250	NS	250	10.8	--	1.5	25.3	--	1.5	—	—	—	11.3	--	1.5
		Sulfate	600	250	NS	250	30.2	--	4.5	14.8	--	4.5	—	—	—	ND	U	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	0.85	--	0.09	ND	U	0.09	ND	U	0.09	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	135	--	6	288	--	6	—	—	—	341	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	—	—	—	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	135	--	6	288	--	6	—	—	—	341	--	6

Table 3-4
Groundwater Analytical Results for Newly Added Wells, Q1 2020

[a] During sampling on January 9, 2020, there was a failure in the sleeve around the passive sampler that resulted in insufficient sample volume for a full suite of analytes. Samples were collected for dissolved metals, nitrate/nitrite, and reduced volume aliquots for EDB and BTEX.

[b] 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, 2018). For metals, the NMWQCC numeric standard applies to dissolved metals.

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

[d] EPA Region 6 RSL for Tapwater (November 2019) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[e] 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.

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

— = Compound not analyzed for.
µg/L = microgram per liter
AFB = Air Force Base
AMSL = above mean sea level
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and total xylenes
$CaCO_3$ = calcium carbonate
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
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
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed 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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106003			KAFB-106004			KAFB-106005		
			Field Sample ID:				GW003-201			GW004-201			GW005-201		
			Sample Date:				1/17/2020			1/16/2020			1/8/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				481			488.74			482.57		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	0.045	--	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	**21**	--	0.5
		Ethylbenzene	750	700	15	700	ND	U	0.8	ND	U	0.8	100	--	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	4	--	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2	ND	U	2	160	--	2

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106005			KAFB-106009			KAFB-106009		
			Field Sample ID:				GW005-601			GW009-201			GW009-601		
			Sample Date:				1/8/2020			1/8/2020			1/8/2020		
			Sample Type:				Field Duplicate			REG			Field Duplicate		
			Sample Depth (ft bgs):				482.57			484.39			484.39		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	0.045	--	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	**22**	--	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	750	700	15	700	100	--	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	4	--	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	160	--	2	ND	U	2	ND	U	2

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106012R			KAFB-106012R			KAFB-106013		
			Field Sample ID:				GW012R-201			GW012R-601			GW013-201		
			Sample Date:				1/14/2020			1/14/2020			1/15/2020		
			Sample Type:				REG			Field Duplicate			REG		
			Sample Depth (ft bgs):				470.5			470.5			491		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	750	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	ND	U	2	ND	U	2

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106029			KAFB-106029			KAFB-106030		
			Field Sample ID:				GW029-201			GW029-601			GW030-201		
			Sample Date:				1/6/2020			1/6/2020			1/6/2020		
			Sample Type:				REG			Field Duplicate			REG		
			Sample Depth (ft bgs):				451.5			451.5			470.2		
			Reference Elevation Interval (ft AMSL):				4857			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106031			KAFB-106032			KAFB-106033		
			Field Sample ID:				GW031-201			GW032-201			GW033-201		
			Sample Date:				1/6/2020			1/6/2020			1/6/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				496.5			456.7			477.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106034			KAFB-106041			KAFB-106049		
			Field Sample ID:				GW034-201			GW041-201			GW049-201		
			Sample Date:				1/6/2020			1/9/2020			1/8/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				502.7			449.7			457.5		
			Reference Elevation Interval (ft AMSL):				4814			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	0.049	--	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106050			KAFB-106051			KAFB-106097		
			Field Sample ID:				GW050-201			GW051-201			GW097-201		
			Sample Date:				1/8/2020			1/8/2020			1/15/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				475.1			501.5			508		
			Reference Elevation Interval (ft AMSL):				4838			4814			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	ND	U	0.5
		Ethylbenzene	750	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

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106098			KAFB-106099			KAFB-106100		
			Field Sample ID:				GW098-201			GW099-201			GW100-201		
			Sample Date:				1/15/2020			1/16/2020			1/16/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				533			503			528		
			Reference Elevation Interval (ft AMSL):				4814			4838			4814		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	750	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	ND	U	2	ND	U	2

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106101			KAFB-106102			KAFB-106149-484		
			Field Sample ID:				GW101-201			GW102-201			GW149-484-201		
			Sample Date:				1/17/2020			1/17/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				501			526			472		
			Reference Elevation Interval (ft AMSL):				4838			4814			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	**40**	--	9.6
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	—	—	—
		Ethylbenzene	750	700	15	700	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	—	—	—
		Xylenes, total	620	10,000	190	620	ND	U	2	ND	U	2	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106151-484			KAFB-106152-484			KAFB-106153-484		
			Field Sample ID:				GW151-484-201			GW152-484-201			GW153-484-201		
			Sample Date:				1/9/2020			1/9/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				472.19			472.88			474.89		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	**3.4**	--	0.96	ND	U	0.019	**460**	--	96
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106201			KAFB-106202			KAFB-106203		
			Field Sample ID:				GW201-201			GW202-201			GW203-201		
			Sample Date:				1/7/2020			1/7/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				490.35			520.6			623.78		
			Reference Elevation Interval (ft AMSL):				4857			4838			4814		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106204			KAFB-106205			KAFB-106206		
			Field Sample ID:				GW204-201			GW205-201			GW206-201		
			Sample Date:				1/8/2020			1/8/2020			1/8/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				463.2			493.2			594.2		
			Reference Elevation Interval (ft AMSL):				4857			4838			4814		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	0.022	J	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106206			KAFB-106207			KAFB-106208		
			Field Sample ID:				GW206-601			GW207-201			GW208-201		
			Sample Date:				1/8/2020			1/8/2020			1/8/2020		
			Sample Type:				Field Duplicate			REG			REG		
			Sample Depth (ft bgs):				594.2			473.7			503.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106209			KAFB-106216			KAFB-106217		
			Field Sample ID:				GW209-201			GW216-201			GW217-201		
			Sample Date:				1/8/2020			1/7/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				603.7			461.4			485.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106218			KAFB-106218			KAFB-106222		
			Field Sample ID:				GW218-201			GW218-601			GW222-201		
			Sample Date:				1/7/2020			1/7/2020			1/7/2020		
			Sample Type:				REG			Field Duplicate			REG		
			Sample Depth (ft bgs):				552.7			552.7			461.1		
			Reference Elevation Interval (ft AMSL):				4814			4814			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106223			KAFB-106224			KAFB-106230		
			Field Sample ID:				GW223-201			GW224-201			GW230-201		
			Sample Date:				1/7/2020			1/7/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				488.5			555.7			501.7		
			Reference Elevation Interval (ft AMSL):				4838			4814			4814		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106230			KAFB-106231			KAFB-106231		
			Field Sample ID:				GW230-601			GW231-201			GW231-601		
			Sample Date:				1/7/2020			1/6/2020			1/6/2020		
			Sample Type:				Field Duplicate			REG			Field Duplicate		
			Sample Depth (ft bgs):				501.7			453.7			453.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106232			KAFB-106235-438			KAFB-106235-472		
			Field Sample ID:				GW232-201			GW235-438-201			GW235-472-201		
			Sample Date:				1/6/2020			1/6/2020			1/6/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				503.7			441.3			472.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106235-501			KAFB-106236-436			KAFB-106236-470		
			Field Sample ID:				GW235-501-201			GW236-436-201			GW236-470-201		
			Sample Date:				1/6/2020			1/7/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				501.7			441.9			470.7		
			Reference Elevation Interval (ft AMSL):				4814			4857			4838		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	—	—	—
		Ethylbenzene	750	700	15	700	—	—	—	—	—	—	—	—	—
		Toluene	1,000	1,000	1,100	1,000	—	—	—	—	—	—	—	—	—
		Xylenes, total	620	10,000	190	620	—	—	—	—	—	—	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106236-499			KAFB-106240-449			KAFB-106241-428		
			Field Sample ID:				GW236-499-201			GW240-449-201			GW241-428-201		
			Sample Date:				1/7/2020			1/7/2020			1/8/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				499.7			473.14			449.6		
			Reference Elevation Interval (ft AMSL):				4814			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	ND	U	0.019	0.021	J	0.017
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	ND	U	0.5	—	—	—
		Ethylbenzene	750	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	—	—	—

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106242-418			KAFB-106243-425			KAFB-106244-445		
			Field Sample ID:				GW242-418-201			GW243-425-201			GW244-445-201		
			Sample Date:				1/6/2020			1/6/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				442.24			446.54			469.19		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	0.042	--	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	—	—	—	—	—	—	ND	U	0.5
		Ethylbenzene	750	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

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106245-460			KAFB-106S2-451			KAFB-106S3-449		
			Field Sample ID:				GW245-460-201			GWS2-451-201			GWS3-449-201		
			Sample Date:				1/8/2020			1/6/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				487.77			478.15			478.91		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	ND	U	0.019	**170**	--	38	**1.5**	--	0.38
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	**9,800**	--	50	**5,500**	--	25
		Ethylbenzene	750	700	15	700	ND	U	0.8	**880**	--	8	**1,400**	--	4
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	**12,000**	--	50	**4,900**	--	25
		Xylenes, total	620	10,000	190	620	ND	U	2	**4,600**	--	20	**4,200**	--	10

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106S4-446			KAFB-106S5-446			KAFB-106S9-447		
			Field Sample ID:				GWS4-446-201			GWS5-446-201			GWS9-447-201		
			Sample Date:				1/6/2020			1/9/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				473.04			470.1			473.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.05	0.05	0.075	0.05	0.026	J	0.019	**13**	--	3.8	**130**	--	38
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	**1,500**	--	10	**7,300**	--	50
		Ethylbenzene	750	700	15	700	ND	U	0.8	**1,600**	--	16	**970**	--	8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	**4,900**	--	10	**11,000**	--	50
		Xylenes, total	620	10,000	190	620	ND	U	2	**3,100**	--	40	**2,700**	--	20

Table 3-5
Groundwater Analytical Results for Organic Compounds for Groundwater Monitoring Wells, Q1 2020

[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, 2018). For metals, the NMWQCC numeric standard applies to dissolved metals.

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

[c] EPA Region 6 RSL for Tapwater (November 2019) 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) 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.

— = Compound not analyzed for.
µg/L = microgram per liter
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 = ethylene dibromide (1,2-dibromoethane)
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
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier

Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed 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 detection limit. The value associated with the U-qualifier is the LOD.

-- = Validation qualifier not assigned.

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106005			KAFB-106005			KAFB-106009		
			Field Sample ID:				GW005-201			GW005-601			GW009-201		
			Sample Date:				1/8/2020			1/8/2020			1/8/2020		
			Sample Type:				REG			Field Duplicate			REG		
			Sample Depth (ft bgs):				482.57			482.57			484.39		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	162	--	0.15	160	--	0.15	153	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	ND	U	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	28.2	--	0.0751	27.8	--	0.0751	22.3	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	**1.14**	--	0.0052	**1.15**	--	0.0052	0.0613	--	0.0052
		Potassium	NS	NS	NS	NS	4.2	--	0.375	4.08	--	0.375	3.9	--	0.375
		Sodium	NS	NS	NS	NS	68.5	--	0.5	67.6	--	0.5	47.8	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	ND	U	0.0016	ND	U	0.0016	ND	U	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00021	J	0.00025	0.00021	J	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	3.6	--	2	3.6	--	2	2.8	--	2
		Chloride	250	250	NS	250	211	J	60	215	J	60	164	J	60
		Sulfate	600	250	NS	250	139	J	18	127	J	18	219	J	180
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	0.062	J	0.09	2.5	--	0.45
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	298	--	6	314	--	6	145	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	298	--	6	314	--	6	145	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106009			KAFB-106012R			KAFB-106012R		
			Field Sample ID:				GW009-601			GW012R-201			GW012R-601		
			Sample Date:				1/8/2020			1/14/2020			1/14/2020		
			Sample Type:				Field Duplicate			REG			Field Duplicate		
			Sample Depth (ft bgs):				484.39			470.5			470.5		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**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	153	--	0.15	156	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	ND	U	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	21.8	--	0.0751	26.1	--	0.0751	25.1	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	0.0593	--	0.0052	ND	U	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	3.82	--	0.375	4.74	--	0.375	4.8	--	0.375
		Sodium	NS	NS	NS	NS	46.6	--	0.5	68.9	--	0.5	69.8	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	ND	U	0.0016	ND	U	0.0016	0.00084	J	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	ND	U	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	2.6	--	2	ND	U	2	2.2	J	2
		Chloride	250	250	NS	250	120	J	30	142	J	30	133	J	30
		Sulfate	600	250	NS	250	152	J	90	**306**	J	90	**298**	J	90
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	2.4	--	0.45	4.2	--	0.18	4.1	--	0.18
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	146	--	6	120	--	6	120	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	146	--	6	120	--	6	120	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106041			KAFB-106149-484[a]			KAFB-106151-484		
			Field Sample ID:				GW041-201			GW149-484-201			GW151-484-201		
			Sample Date:				1/9/2020			1/9/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				449.7			472			472.19		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	53.7	--	0.15	52.3	--	0.15	142	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	ND	U	0.103	0.134	J	0.103
		Magnesium	NS	NS	NS	NS	7.31	--	0.0751	8.22	--	0.0751	22.5	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	**0.76**	--	0.0052	**0.976**	--	0.0052
		Potassium	NS	NS	NS	NS	3	--	0.375	2.84	--	0.375	4.13	--	0.375
		Sodium	NS	NS	NS	NS	27.5	--	0.5	27.9	--	0.5	38.6	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00099	J	0.0016	0.0012	J	0.0016	ND	U	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	0.00014	J	0.00025	0.0002	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2	—	—	—	ND	U	2
		Chloride	250	250	NS	250	31.7	--	6	—	—	—	35	--	3
		Sulfate	600	250	NS	250	75.5	--	18	—	—	—	28.5	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	0.48	--	0.09	—	—	—	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	111	--	6	—	—	—	326	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	—	—	—	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	111	--	6	—	—	—	326	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106152-484			KAFB-106153-484			KAFB-106230		
			Field Sample ID:				GW152-484-201			GW153-484-201			GW230-201		
			Sample Date:				1/9/2020			1/9/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				472.88			474.89			501.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4814		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	167	--	0.15	133	--	0.15	42.7	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	**1.39**	--	0.103	0.395	--	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	27.3	--	0.0751	20.5	--	0.0751	5.85	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	**4.14**	--	0.0052	**2.7**	--	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	4.67	--	0.375	4	--	0.375	2.4	--	0.375
		Sodium	NS	NS	NS	NS	45	--	0.5	39.5	--	0.5	21.6	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.001	J	0.0016	0.0019	J	0.0016	0.00085	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00056	--	0.00025	0.00019	J	0.00025	0.00017	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	1.7	J	2	ND	U	2	ND	U	2
		Chloride	250	250	NS	250	77.9	--	6	13.8	--	1.5	37.8	--	3
		Sulfate	600	250	NS	250	ND	U	4.5	ND	U	4.5	55.1	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	ND	U	0.09	ND	U	0.09	1	--	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	465	--	6	391	--	6	109	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	465	--	6	391	--	6	109	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106230			KAFB-106240-449			KAFB-106241-428		
			Field Sample ID:				GW230-601			GW240-449-201			GW241-428-201		
			Sample Date:				1/7/2020			1/7/2020			1/8/2020		
			Sample Type:				Field Duplicate			REG			REG		
			Sample Depth (ft bgs):				501.7			473.14			449.6		
			Reference Elevation Interval (ft AMSL):				4814			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	47.6	--	0.15	78.3	--	0.15	44.2	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	0.0735	J	0.103	ND	U	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	6.5	--	0.0751	11.4	--	0.0751	6.21	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	2.62	--	0.375	3.09	--	0.375	2.34	--	0.375
		Sodium	NS	NS	NS	NS	24	--	0.5	27.8	--	0.5	23.5	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00098	J	0.0016	0.0011	J	0.0016	0.0011	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00016	J	0.00025	ND	U	0.00025	ND	U	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2	ND	U	2	ND	UJ	2
		Chloride	250	250	NS	250	35.5	--	3	56.3	--	15	21.7	J	1.5
		Sulfate	600	250	NS	250	59	--	4.5	72.6	--	4.5	39.6	J	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	1.1	--	0.09	1.5	--	0.09	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	90.5	--	6	167	--	6	134	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	90.5	--	6	167	--	6	134	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106242-418			KAFB-106243-425			KAFB-106244-445		
			Field Sample ID:				GW242-418-201			GW243-425-201			GW244-445-201		
			Sample Date:				1/6/2020			1/6/2020			1/7/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				442.24			446.54			469.19		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	117	--	0.15	54.8	--	0.15	146	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	0.076	J	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	15.9	--	0.0751	7.26	--	0.0751	23.2	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	0.0472	--	0.0052	ND	U	0.0052
		Potassium	NS	NS	NS	NS	3.8	--	0.375	2.72	--	0.375	4.82	--	0.375
		Sodium	NS	NS	NS	NS	36.7	--	0.5	27.9	--	0.5	59.5	--	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	0.00091	J	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	0.00012	J	0.00025	0.000096	J	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	1.6	J	2	ND	U	2	ND	U	2
		Chloride	250	250	NS	250	94.3	--	6	21.8	--	1.5	233	--	30
		Sulfate	600	250	NS	250	188	--	18	46.6	--	4.5	**624**	--	90
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	2.3	--	0.09	ND	U	0.09	3.2	--	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	120	--	6	150	--	6	109	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	120	--	6	150	--	6	109	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106245-460			KAFB-106S2-451			KAFB-106S3-449		
			Field Sample ID:				GW245-460-201			GWS2-451-201			GWS3-449-201		
			Sample Date:				1/8/2020			1/6/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				487.77			478.15			478.91		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	46.4	--	0.15	161	--	0.15	167	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	0.43	--	0.103	**7.47**	--	0.103
		Magnesium	NS	NS	NS	NS	6.85	--	0.0751	26.1	--	0.0751	28.6	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	**7.33**	--	0.0052	**7.33**	--	0.0052
		Potassium	NS	NS	NS	NS	2.2	--	0.375	3.89	--	0.375	4.4	--	0.375
		Sodium	NS	NS	NS	NS	22.5	--	0.5	44.3	--	0.5	44.5	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.0009	J	0.0016	0.0042	--	0.0016	0.0058	--	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	0.00061	--	0.00025	0.00097	--	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	ND	U	2	1.9	J	2	2.2	J	2
		Chloride	250	250	NS	250	39	J	3	75.2	--	15	122	--	15
		Sulfate	600	250	NS	250	28.5	J	4.5	7.9	--	4.5	ND	U	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	0.74	--	0.09	ND	U	0.09	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	111	--	6	398	--	6	452	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	111	--	6	398	--	6	452	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

			Well Location ID:				KAFB-106S4-446			KAFB-106S5-446			KAFB-106S9-447		
			Field Sample ID:				GWS4-446-201			GWS5-446-201			GWS9-447-201		
			Sample Date:				1/6/2020			1/9/2020			1/9/2020		
			Sample Type:				REG			REG			REG		
			Sample Depth (ft bgs):				473.04			470.1			473.7		
			Reference Elevation Interval (ft AMSL):				4857			4857			4857		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[b]**	**EPA MCL[c]**	**EPA RSL[d]**	**Project Screening Level[e]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	205	--	0.15	73.5	--	0.15	117	--	0.15
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.103	**1.51**	--	0.103	0.972	--	0.103
		Magnesium	NS	NS	NS	NS	30.7	--	0.0751	12.2	--	0.0751	20.7	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	**2.19**	--	0.0052	**3.73**	--	0.0052
		Potassium	NS	NS	NS	NS	5.11	--	0.375	3.03	--	0.375	3.71	--	0.375
		Sodium	NS	NS	NS	NS	70.7	--	0.5	28.9	--	0.5	35.3	--	0.5
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	ND	U	0.0016	0.003	--	0.0016	0.0032	--	0.0016
		Lead	0.015	0.015	0.015	0.015	ND	U	0.00025	0.00047	J	0.00025	0.00052	--	0.00025
Anions	Method E300.0 (mg/L)	Bromide	NS	NS	NS	NS	2.8	--	2	ND	U	2	ND	U	2
		Chloride	250	250	NS	250	196	--	30	21.5	--	1.5	1.4	J	1.5
		Sulfate	600	250	NS	250	**397**	--	90	5	J	4.5	17.8	--	4.5
	Method E353.2 (mg/L)	Nitrate/Nitrite Nitrogen	10[f]	10[f]	NS	10[f]	6.9	--	0.9	ND	U	0.09	ND	U	0.09
Alkalinity	Method SM2320B (mg/L)	Alkalinity, bicarbonate (as $CaCO_3$)	NS	NS	NS	NS	98	--	6	271	--	6	379	--	6
		Alkalinity, carbonate (as $CaCO_3$)	NS	NS	NS	NS	ND	U	6	ND	U	6	ND	U	6
		Alkalinity, total (as $CaCO_3$)	NS	NS	NS	NS	98	--	6	271	--	6	379	--	6

Table 3-6
Groundwater Analytical Results for Inorganic Compounds for Groundwater Monitoring Wells, Q1 2020

[h] During sampling on January 9, 2020, there was a failure in the sleeve around the passive sampler that resulted in insufficient sample volume for a full suite of analytes. Samples were collected for EDB, dissolved metals, and total metals.

b 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, 2018). For metals, the NMWQCC numeric standard applies to dissolved metals.

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

d EPA Region 6 RSL for Tapwater (November 2019) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

e 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.

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

— = Compound not analyzed for.
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
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed 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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 3-7
Status of Quarterly Baseline Sampling Newly Added Wells and Summary of Q1 2020 Analytical Results

Well Location ID	Reference Elevation Interval (ft AMSL)	Dates Newly Added Wells Sampled	Number of Quarters Sampled	Remaining Quarters to Complete Baseline	Quarters Needed for Baseline Completion	Summary of Analytical Results for Samples Collected During Q1 2020
KAFB-106247-450[a]	4857	4/16/2019, 5/9/2019	1	0	4	EDB and BTEX were not detected. No inorganic compounds exceeded their respective PSL.
		8/12/2019	2			
		10/31/2019	3			
		1/6/2020	4			
KAFB-106S1-447[a]	4857	4/16/2019, 5/9/2019	1	0	4	EDB, benzene, toluene, and total xylenes exceeded their respective MCLs. Ethylbenzene was detected below the MCL. Dissolved manganese and iron exceeded their PSLs. No other inorganic compounds exceeded their respective PSL.
		8/12/2019	2			
		10/31/2019	3			
		1/9/2020	4			
KAFB-106S7-451[a,b]	4857	4/16/2019, 5/9/2019	1	2	4	EDB and BTEX exceeded their respective MCLs. Dissolved manganese and dissolved iron exceeded their PSLs.
		8/12/2019	2			
		10/31/2019	3			
		1/9/2020	4			
		TBD	5			
		TBD	6			
KAFB-106S8-451[a]	4857	4/16/2019, 5/9/2019	1	0	4	EDB and benzene exceeded their respective MCLs. Toluene, ethylbenzene, and total xylenes were detected below their respective MCLs. Dissolved manganese and iron exceeded their respective PSLs. No other inorganic compounds exceeded their respective PSL.
		8/12/2019	2			
		10/31/2019	3			
		1/6/2020	4			

Table 3-7
Status of Quarterly Baseline Sampling Newly Added Wells and Summary of Q1 2020 Analytical Results

[a] This well was sampled for dissolved metals, anions, and alkalinity on May 9, 2019.

[b] During sampling in both Q4 2019 and Q1 2020, there was a failure in the sleeve around the passive sampler that resulted in insufficient sample volume for the full suite of analytes. Therefore, to achieve four complete sets of baseline analysis, two additional quarters of baseline sampling will be conducted.

AMSL = above mean sea level
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EDB = ethylene dibromide (1,2-dibromoethane)
ft = foot (feet)
ID = identification
MCL = maximum contaminant level
PSL = project screening level
Q1 = first quarter
TBD = to be determined

Table 3-8
Historical EDB Concentrations

		Analyte:	EDB (1,2-dibromoethane)		
		EPA MCL[a]:	0.05 µg/L		
Well Location ID	Sample Date	Sampling Quarter	Result	Val Qual	LOD
KAFB-106001[b]	11/1/2019	Q4 2019	**0.76**	--	0.19
	10/30/2018	Q4 2018	**1.2**	--	0.19
	5/2/2018	Q2 2018	**2.6**	--	0.38
KAFB-106002	10/11/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019
KAFB-106003	1/17/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/24/2019	Q3 2019	ND	U	0.019
	4/25/2019	Q2 2019	ND	U	0.019
KAFB-106004	1/16/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/12/2019	Q3 2019	ND	U	0.019
	5/1/2019	Q2 2019	ND	U	0.019
KAFB-106005	1/8/2020	Q1 2020	0.045	--	0.019
	10/30/2019	Q4 2019	**0.10**	J	0.019
	7/31/2019	Q3 2019	**0.11**	--	0.019
	4/18/2019	Q2 2019	**0.40**	J	0.094
KAFB-106006	11/4/2019	Q4 2019	ND	U	0.019
	4/25/2019	Q2 2019	0.035	--	0.019
	11/5/2018	Q4 2018	ND	U	0.019
KAFB-106007	10/18/2019	Q4 2019	ND	U	0.019
	4/24/2019	Q2 2019	ND	U	0.019
	10/25/2018	Q4 2018	ND	U	0.019
KAFB-106008[b]	11/7/2019	Q4 2019	**4.6**	--	1.9
	10/22/2018	Q4 2018	**20**	--	3.8
	4/18/2018	Q2 2018	0.015	J	0.019
KAFB-106009	1/8/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
KAFB-106010	11/5/2019	Q4 2019	**0.89**	J	0.38
	4/23/2019	Q2 2019	**0.65**	--	0.19
	10/25/2018	Q4 2018	**2.1**	--	0.19
KAFB-106011	10/14/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	0.013	J	0.019
	10/16/2018	Q4 2018	ND	U	0.019
KAFB-106012R	1/14/2020	Q1 2020	ND	U	0.019
	10/18/2019	Q4 2019	ND	U	0.019
	7/24/2019	Q3 2019	ND	U	0.019
	4/23/2019	Q2 2019	ND	U	0.019
KAFB-106013	1/15/2020	Q1 2020	ND	U	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/15/2019	Q3 2019	ND	U	0.019
	4/30/2019	Q2 2019	ND	U	0.019
KAFB-106014	11/4/2019	Q4 2019	ND	U	0.019
	5/1/2019	Q2 2019	**0.1**	--	0.019
	11/5/2018	Q4 2018	**0.29**	--	0.095
KAFB-106015	10/30/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106016	10/11/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/18/2018	Q4 2018	ND	U	0.019
KAFB-106017	10/15/2019	Q4 2019	**0.25**	J	0.095
	4/2/2019	Q2 2019	**0.2**	--	0.019
	10/18/2018	Q4 2018	**0.25**	--	0.019
KAFB-106018	10/15/2019	Q4 2019	ND	U	0.019
	4/4/2019	Q2 2019	0.038	--	0.019
	10/18/2018	Q4 2018	0.025	J	0.019
KAFB-106019	10/16/2019	Q4 2019	**0.052**	--	0.019
	5/1/2019	Q2 2019	0.016	J	0.019
	10/29/2018	Q4 2018	**0.079**	--	0.019
KAFB-106020	10/17/2019	Q4 2019	ND	U	0.019
	5/2/2019	Q2 2019	ND	U	0.019
	11/6/2018	Q4 2018	ND	U	0.019
KAFB-106021	10/28/2019	Q4 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
	10/8/2018	Q4 2018	ND	U	0.019
KAFB-106022	10/24/2019	Q4 2019	ND	U	0.019
	4/15/2019	Q2 2019	0.022	J	0.019
	10/2/2018	Q4 2018	0.038	--	0.019
KAFB-106023	10/31/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019
KAFB-106024	10/16/2019	Q4 2019	ND	U	0.019
	4/3/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019
KAFB-106025	10/30/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019

Table 3-8
Historical EDB Concentrations

			Analyte:	EDB (1,2-dibromoethane)	
			EPA MCL[a]:	0.05 µg/L	
KAFB-106026[c]	10/29/2019	Q4 2019	ND	U	0.019
	11/12/2015	Q4 2015	0.0214	J	0.0285
	8/17/2015	Q3 2015	0.0199	J	0.0278
KAFB-106027	10/15/2019	Q4 2019	ND	U	0.019
	4/1/2019	Q2 2019	ND	U	0.019
	10/16/2018	Q4 2018	ND	U	0.019
KAFB-106028[d]	4/22/2019	Q2 2019	**0.34**	--	0.095
	10/22/2018	Q4 2018	**13**	--	1.9
	4/12/2018	Q2 2018	**4.0**	--	0.95
KAFB-106029	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106030	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106031	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106032	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106033	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106034	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106035	10/29/2019	Q4 2019	**0.12**	--	0.019
	4/10/2019	Q2 2019	**0.12**	--	0.019
	10/2/2018	Q4 2018	**0.15**	--	0.019
KAFB-106036	10/29/2019	Q4 2019	**0.097**	--	0.019
	4/10/2019	Q2 2019	**0.13**	--	0.019
	10/2/2018	Q4 2018	**0.19**	--	0.019
KAFB-106037	10/29/2019	Q4 2019	**0.15**	--	0.019
	4/10/2019	Q2 2019	**0.13**	--	0.019
	10/2/2018	Q4 2018	**0.099**	--	0.019
KAFB-106038	10/17/2019	Q4 2019	ND	U	0.019
	4/4/2019	Q2 2019	ND	U	0.019
	11/7/2018	Q4 2018	ND	U	0.019
KAFB-106039	10/17/2019	Q4 2019	ND	U	0.019
	4/22/2019	Q2 2019	ND	U	0.019
	11/7/2018	Q4 2018	ND	U	0.019
KAFB-106040	10/16/2019	Q4 2019	ND	U	0.019
	4/22/2019	Q2 2019	ND	U	0.019
	11/7/2018	Q4 2018	ND	U	0.019
KAFB-106041	1/9/2020	Q1 2020	0.049	--	0.019
	10/30/2019	Q4 2019	**0.057**	J	0.019
	8/12/2019	Q3 2019	0.032	--	0.019
	4/8/2019	Q2 2019	0.015	J	0.019
KAFB-106042	10/30/2019	Q4 2019	**0.057**	J	0.019
	4/8/2019	Q2 2019	0.027	J	0.019
	10/2/2018	Q4 2018	0.017	J	0.0095
KAFB-106043	10/30/2019	Q4 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106044	10/15/2019	Q4 2019	ND	U	0.019
	4/1/2019	Q2 2019	ND	U	0.019
	10/16/2018	Q4 2018	ND	U	0.019
KAFB-106045	10/21/2019	Q4 2019	ND	U	0.019
	4/24/2019	Q2 2019	ND	U	0.019
	10/25/2018	Q4 2018	ND	U	0.019
KAFB-106046	10/14/2019	Q4 2019	ND	U	0.019
	4/3/2019	Q2 2019	ND	U	0.019
	10/18/2018	Q4 2018	ND	U	0.019
KAFB-106047	10/14/2019	Q4 2019	ND	U	0.019
	4/3/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019
KAFB-106048	10/22/2019	Q4 2019	ND	U	0.019
	4/26/2019	Q2 2019	ND	U	0.019
	11/13/2018	Q4 2018	ND	U	0.019
KAFB-106049	1/8/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106050	1/8/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019

Table 3-8
Historical EDB Concentrations

		Analyte:	EDB (1,2-dibromoethane)		
		EPA MCL[a]:	0.05 µg/L		
KAFB-106051	1/8/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106052	10/30/2019	Q4 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106053	10/30/2019	Q4 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106054	10/30/2019	Q4 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106055	10/28/2019	Q4 2019	ND	U	0.019
	4/15/2019	Q2 2019	0.019	J	0.019
	10/4/2018	Q4 2018	0.02	J	0.019
KAFB-106057	10/28/2019	Q4 2019	ND	U	0.019
	4/15/2019	Q2 2019	0.01	J	0.019
	10/9/2018	Q4 2018	ND	U	0.019
KAFB-106058	10/28/2019	Q4 2019	ND	U	0.019
	4/15/2019	Q2 2019	0.0095	J	0.019
	10/4/2018	Q4 2018	ND	U	0.019
KAFB-106059	10/21/2019	Q4 2019	**1.7**	J	0.38
	4/26/2019	Q2 2019	**3.1**	--	0.38
	10/25/2018	Q4 2018	**2.7**	--	0.38
KAFB-106060	10/11/2019	Q4 2019	**0.14**	--	0.019
	4/1/2019	Q2 2019	0.049	--	0.019
	10/23/2018	Q4 2018	ND	U	0.019
KAFB-106061	11/5/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/24/2018	Q4 2018	ND	U	0.019
KAFB-106062	10/14/2019	Q4 2019	ND	U	0.019
	4/4/2019	Q2 2019	ND	U	0.019
	10/4/2018	Q4 2018	ND	U	0.019
KAFB-106063[e]	10/4/2018	Q4 2018	**3.6**	J	0.38
	4/10/2018	Q2 2018	**3.7**	--	0.95
	10/24/2017	Q4 2017	ND	U	0.019
KAFB-106064[e]	10/4/2018	Q4 2018	**0.25**	--	0.019
	4/10/2018	Q2 2018	**12**	--	1.9
	10/24/2017	Q4 2017	**62**	--	0.019
KAFB-106065	10/11/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019
KAFB-106066	10/10/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019
KAFB-106067	10/14/2019	Q4 2019	ND	U	0.019
	4/1/2019	Q2 2019	0.027	J	0.019
	10/5/2018	Q4 2018	0.018	J	0.019
KAFB-106068	10/11/2019	Q4 2019	ND	U	0.019
	4/1/2019	Q2 2019	ND	U	0.019
	10/5/2018	Q4 2018	ND	U	0.019
KAFB-106069	10/16/2019	Q4 2019	ND	U	0.019
	4/30/2019	Q2 2019	0.014	J	0.019
	10/29/2018	Q4 2018	0.044	--	0.019
KAFB-106070	11/1/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.026
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106071	11/1/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106072	11/1/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	0.03	--	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106073	10/17/2019	Q4 2019	ND	U	0.019
	5/2/2019	Q2 2019	0.015	J	0.019
	11/6/2018	Q4 2018	0.012	J	0.019
KAFB-106074	10/22/2019	Q4 2019	ND	U	0.019
	4/25/2019	Q2 2019	ND	U	0.019
	11/1/2018	Q4 2018	ND	U	0.019
KAFB-106075	10/14/2019	Q4 2019	0.034	--	0.019
	4/3/2019	Q2 2019	0.043	--	0.019
	10/23/2018	Q4 2018	0.045	--	0.019
KAFB-106076	10/16/2019	Q4 2019	0.035	--	0.019
	5/2/2019	Q2 2019	0.047	--	0.019
	10/30/2018	Q4 2018	0.013	J	0.019
KAFB-106077	10/18/2019	Q4 2019	ND	U	0.019
	4/23/2019	Q2 2019	ND	U	0.019
	11/9/2018	Q4 2018	ND	U	0.019
KAFB-106078	10/15/2019	Q4 2019	ND	U	0.019
	4/2/2019	Q2 2019	ND	U	0.019
	10/17/2018	Q4 2018	ND	U	0.019

Table 3-8
Historical EDB Concentrations

		Analyte:	EDB (1,2-dibromoethane)		
		EPA MCL[a]:	0.05 µg/L		
KAFB-106079[b]	10/23/2019	Q4 2019	0.027	J	0.019
	10/23/2018	Q4 2018	0.011	J	0.019
	4/16/2018	Q2 2018	0.023	J	0.019
KAFB-106080	10/16/2019	Q4 2019	ND	U	0.019
	4/3/2019	Q2 2019	ND	U	0.019
	10/18/2018	Q4 2018	ND	U	0.019
KAFB-106081	10/18/2019	Q4 2019	ND	U	0.019
	4/24/2019	Q2 2019	ND	U	0.019
	10/18/2018	Q4 2018	ND	U	0.019
KAFB-106082	10/18/2019	Q4 2019	ND	U	0.019
	4/29/2019	Q2 2019	ND	U	0.019
	10/31/2018	Q4 2018	0.016	J	0.019
KAFB-106083	10/18/2019	Q4 2019	ND	U	0.019
	4/30/2019	Q2 2019	0.026	J	0.019
	10/31/2018	Q4 2018	0.022	J	0.019
KAFB-106084	10/22/2019	Q4 2019	ND	U	0.019
	4/29/2019	Q2 2019	ND	U	0.095
	10/31/2018	Q4 2018	ND	U	0.019
KAFB-106085	11/4/2019	Q4 2019	0.014	J	0.019
	4/10/2019	Q2 2019	0.014	J	0.019
	10/1/2018	Q4 2018	**0.054**	--	0.019
KAFB-106086	11/4/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106087	11/4/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106088	11/4/2019	Q4 2019	**0.11**	--	0.019
	4/10/2019	Q2 2019	**0.085**	--	0.019
	10/1/2018	Q4 2018	**0.14**	--	0.019
KAFB-106089	11/4/2019	Q4 2019	**0.064**	--	0.019
	4/10/2019	Q2 2019	**0.058**	--	0.019
	10/1/2018	Q4 2018	0.045	J	0.0095
KAFB-106090	11/4/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106091	10/31/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019
KAFB-106092	10/31/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019
KAFB-106093	10/31/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019
KAFB-106094	10/14/2019	Q4 2019	ND	U	0.019
	4/3/2019	Q2 2019	0.019	J	0.019
	10/16/2018	Q4 2018	0.030	--	0.019
KAFB-106095	10/21/2019	Q4 2019	ND	U	0.019
	5/2/2019	Q2 2019	ND	U	0.019
	11/13/2018	Q4 2018	ND	U	0.019
KAFB-106096	10/10/2019	Q4 2019	ND	U	0.019
	4/1/2019	Q2 2019	ND	U	0.019
	10/16/2018	Q4 2018	ND	U	0.019
KAFB-106097	1/15/2020	Q1 2020	ND	U	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/15/2019	Q3 2019	ND	U	0.019
	4/29/2019	Q2 2019	ND	U	0.19
KAFB-106098	1/15/2020	Q1 2020	ND	U	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/15/2019	Q3 2019	ND	U	0.019
	4/30/2019	Q2 2019	ND	U	0.019
KAFB-106099	1/16/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/12/2019	Q3 2019	ND	U	0.019
	5/1/2019	Q2 2019	ND	U	0.019
KAFB-106100	1/16/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/12/2019	Q3 2019	ND	U	0.019
	5/1/2019	Q2 2019	ND	U	0.019
KAFB-106101	1/17/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/11/2019	Q3 2019	ND	U	0.019
	4/26/2019	Q2 2019	ND	U	0.019
KAFB-106102	1/17/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/11/2019	Q3 2019	ND	U	0.019
	4/25/2019	Q2 2019	ND	U	0.019
KAFB-106103	10/31/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019
KAFB-106104	10/31/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/3/2018	Q4 2018	ND	U	0.019

Table 3-8
Historical EDB Concentrations

		Analyte:	EDB (1,2-dibromoethane)		
		EPA MCL[a]:	0.05 µg/L		
KAFB-106105	10/30/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106106	10/30/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	0.020	J	0.019
KAFB-106107	10/30/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106149-484	1/9/2020	Q1 2020	**40**	--	9.6
	11/1/2019	Q4 2019	**100**	--	19
	8/13/2019	Q3 2019	**38**	--	9.5
	4/16/2019	Q2 2019	**36**	--	3.8
KAFB-106151-484	1/9/2020	Q1 2020	**3.4**	--	0.96
	11/1/2019	Q4 2019	**1.4**	--	0.38
	8/13/2019	Q3 2019	**0.29**	--	0.019
	4/18/2019	Q2 2019	**4.3**	--	0.94
KAFB-106152-484	1/9/2020	Q1 2020	ND	U	0.019
	11/1/2019	Q4 2019	0.043	--	0.019
	8/13/2019	Q3 2019	0.013	J	0.019
	4/18/2019	Q2 2019	ND	U	0.095
KAFB-106153-484	1/9/2020	Q1 2020	**460**	--	96
	11/1/2019	Q4 2019	**820**	--	94
	8/12/2019	Q3 2019	**68**	--	38
	4/18/2019	Q2 2019	**350**	--	95
KAFB-106201	1/7/2020	Q1 2020	ND	U	0.019
	10/30/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106202	1/7/2020	Q1 2020	ND	U	0.019
	10/30/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106203	1/7/2020	Q1 2020	ND	U	0.019
	10/30/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106204	1/8/2020	Q1 2020	ND	U	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106205	1/8/2020	Q1 2020	0.022	J	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106206	1/8/2020	Q1 2020	ND	U	0.019
	10/23/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106207	1/8/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106208	1/8/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106209	1/8/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/31/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106212	10/29/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106213	10/29/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106214	10/29/2019	Q4 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106215	10/29/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/2/2018	Q4 2018	ND	U	0.019
KAFB-106216	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106217	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019

Table 3-8
Historical EDB Concentrations

		Analyte:	EDB (1,2-dibromoethane)		
		EPA MCL[a]:	0.05 µg/L		
KAFB-106218	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106219	11/5/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/4/2018	Q4 2018	ND	U	0.019
KAFB-106220	11/4/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/4/2018	Q4 2018	ND	U	0.019
KAFB-106221	11/4/2019	Q4 2019	ND	U	0.019
	4/10/2019	Q2 2019	ND	U	0.019
	10/4/2018	Q4 2018	ND	U	0.019
KAFB-106222	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106223	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106224	1/7/2020	Q1 2020	ND	U	0.019
	10/24/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
KAFB-106225	10/29/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	0.018	J	0.019
	10/1/2018	Q4 2018	**0.17**	--	0.019
KAFB-106226	10/29/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106227	10/29/2019	Q4 2019	ND	U	0.019
	4/9/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	ND	U	0.019
KAFB-106229	10/29/2019	Q4 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
	10/1/2018	Q4 2018	0.011	J	0.019
KAFB-106230	1/7/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	4/7/2016	Q2 2016	0.011	J	0.020
	2/4/2016	Q1 2016	0.020	J	0.020
KAFB-106231	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106232	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106235-438	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106235-472	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106235-501	1/6/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106236-436	1/7/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106236-470	1/7/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106236-499	1/7/2020	Q1 2020	ND	U	0.019
	10/29/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106240-449	1/7/2020	Q1 2020	ND	U	0.019
	10/30/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106241-428	1/8/2020	Q1 2020	0.021	J	0.017
	10/30/2019	Q4 2019	0.026	J	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	0.033	--	0.019

Table 3-8
Historical EDB Concentrations

			Analyte:	EDB (1,2-dibromoethane)	
			EPA MCL[a]:	0.05 µg/L	
KAFB-106242-418	1/6/2020	Q1 2020	ND	U	0.019
	10/28/2019	Q4 2019	ND	U	0.019
	7/29/2019	Q3 2019	ND	U	0.019
	4/15/2019	Q2 2019	ND	U	0.019
KAFB-106243-425	1/6/2020	Q1 2020	0.042	--	0.019
	10/30/2019	Q4 2019	**0.054**	J	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	0.044	--	0.019
KAFB-106244-445	1/7/2020	Q1 2020	ND	U	0.019
	10/30/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106245-460	1/8/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	7/30/2019	Q3 2019	ND	U	0.019
	4/8/2019	Q2 2019	ND	U	0.019
KAFB-106247-450	1/6/2020	Q1 2020	ND	U	0.019
	10/31/2019	Q4 2019	ND	U	0.019
	8/12/2019	Q3 2019	ND	U	0.019
	4/16/2019	Q2 2019	ND	U	0.019
KAFB-106S1-447	1/9/2020	Q1 2020	**450**	J	95
	10/31/2019	Q4 2019	**380**	--	95
	8/12/2019	Q3 2019	**480**	--	76
	4/16/2019	Q2 2019	**250**	--	97
KAFB-106S2-451	1/6/2020	Q1 2020	**170**	--	38
	10/31/2019	Q4 2019	**280**	--	96
	8/13/2019	Q3 2019	**160**	--	38
	4/16/2019	Q2 2019	**260**	--	95
KAFB-106S3-449	1/9/2020	Q1 2020	**1.5**	--	0.38
	10/31/2019	Q4 2019	**0.80**	--	0.19
	8/13/2019	Q3 2019	**2.6**	--	0.38
	4/16/2019	Q2 2019	**11**	--	2
KAFB-106S4-446	1/6/2020	Q1 2020	0.026	J	0.019
	10/31/2019	Q4 2019	0.048	--	0.019
	8/13/2019	Q3 2019	0.034	--	0.019
	4/16/2019	Q2 2019	0.041	--	0.019
KAFB-106S5-446	1/9/2020	Q1 2020	**13**	--	3.8
	10/31/2019	Q4 2019	**16**	--	1.9
	8/12/2019	Q3 2019	**12**	--	1.9
	4/16/2019	Q2 2019	**15**	--	1.9
KAFB-106S7-451	1/9/2020	Q1 2020	**2.0**	--	0.38
	10/31/2019	Q4 2019	**2.6**	--	0.38
	8/12/2019	Q3 2019	**22**	--	3.8
	4/16/2019	Q2 2019	**8.7**	--	0.95
KAFB-106S8-451	1/6/2020	Q1 2020	**34**	--	9.4
	10/31/2019	Q4 2019	**170**	--	38
	8/12/2019	Q3 2019	**140**	--	38
	4/16/2019	Q2 2019	**96**	--	19
KAFB-106S9-447	1/9/2020	Q1 2020	**130**	--	38
	11/1/2019	Q4 2019	**58**	--	9.5
	8/13/2019	Q3 2019	**0.065**	--	0.019
	4/16/2019	Q2 2019	**63**	--	19
KAFB-3411	10/17/2019	Q4 2019	ND	U	0.019
	4/23/2019	Q2 2019	ND	U	0.019
	10/22/2018	Q4 2018	ND	U	0.019

Table 3-8
Historical EDB Concentrations

[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) 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. For EDB, the EPA MCL and the NMWQCC numeric standard are both 0.05 µg/L.

[b] This well was not sampled in Q2 2019 due to suspected biofouling in the well.

[c] This well was not sampled between Q4 2015 and Q4 2019 due to security issues.

[d] This well was not sampled in Q4 2019 due to suspected biofouling in the well.

[e] 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, and results will be available in the next report.

[f] This well was not sampled between Q2 2016 and Q4 2019 due to security issues.

— = Compound not analyzed for.
µg/L = microgram per liter
AFB = Air Force Base
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NMWQCC = New Mexico Water Quality Control Commission
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed 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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106001[b]	11/1/2019	Q4 2019	4	--	0.5	ND	U	0.8	11	--	0.5	2	J	2
	10/30/2018	Q4 2018	**6**	--	0.5	0.8	J	0.8	34	--	0.5	6	--	2
	10/31/2017	Q4 2017	1	--	1	ND	U	1	12	--	1	4	--	1
KAFB-106002	10/11/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/25/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106003	1/17/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	0.3	J	0.5	ND	U	2
	7/24/2019	Q3 2019	ND	U	0.5	ND	U	0.8	0.2	J	0.5	ND	U	2
	4/25/2019	Q2 2019	ND	U	0.5	ND	U	0.8	3	--	0.5	ND	U	2
KAFB-106004	1/16/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/12/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2019	Q2 2019	ND	U	0.5	ND	U	0.8	2	--	0.5	ND	U	2
KAFB-106005	1/8/2020	Q1 2020	**21**	--	0.5	100	--	0.8	4	--	0.5	160	--	2
	10/30/2019	Q4 2019	**30**	--	0.5	83	--	0.8	2	--	0.5	170	--	2
	7/31/2019	Q3 2019	**37**	--	0.5	42	--	0.8	1	--	0.5	95	--	2
	4/18/2019	Q2 2019	**120**	--	0.5	51	--	0.8	2	--	0.5	110	--	2
KAFB-106006	11/4/2019	Q4 2019	3	--	0.5	1	--	0.8	3	--	0.5	4	J	2
	4/25/2019	Q2 2019	**22**	--	0.5	0.8	J	0.8	27	--	0.5	5	--	2
	11/5/2018	Q4 2018	**17**	--	0.5	ND	U	0.8	12	--	0.5	ND	U	2
KAFB-106007	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	4	--	0.5	ND	U	2
	10/25/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.5	J	0.5	ND	U	2
	10/26/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106008	11/7/2019	Q4 2019	**3,400**	--	10	230	--	2	950	--	10	480	--	4
	10/22/2018	Q4 2018	**5,800**	--	50	180	J	8	**2,700**	--	5	540	--	20
	10/20/2017	Q4 2017	**2,300**	--	20	120	--	2	**1,700**	--	20	310	--	2
KAFB-106009	1/8/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/31/2019	Q3 2019	2	--	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/16/2019	Q2 2019	1	--	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106010	11/5/2019	Q4 2019	**280**	--	5	190	--	0.8	180	--	0.5	150	--	2
	4/23/2019	Q2 2019	**280**	--	0.5	130	--	0.8	28	--	0.5	40	--	2
	10/25/2018	Q4 2018	**2,300**	--	10	580	--	16	**2,900**	--	10	**1,100**	--	40
KAFB-106011	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/2/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106012R	1/14/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	7/24/2019	Q3 2019	ND	U	0.5	ND	U	0.8	2	--	0.5	ND	U	2
	4/23/2019	Q2 2019	ND	U	0.5	ND	U	0.8	0.9	J	0.5	ND	U	2
KAFB-106013	1/15/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/15/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/30/2019	Q2 2019	ND	U	0.5	ND	U	0.8	4	--	0.5	ND	U	2
KAFB-106014	11/4/2019	Q4 2019	**15**	--	0.5	20	--	0.8	2	--	0.5	20	--	2
	5/1/2019	Q2 2019	**53**	--	0.5	67	--	0.8	460	--	5	190	--	2
	11/5/2018	Q4 2018	**240**	--	0.5	190	--	0.8	67	--	0.5	89	--	2

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106015	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106016	10/11/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/26/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106017	10/15/2019	Q4 2019	0.8	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/2/2019	Q2 2019	0.6	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2018	Q4 2018	1	--	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106018	10/15/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/4/2019	Q2 2019	0.2	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106019	10/16/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/29/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/12/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106020	10/17/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/6/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/9/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106021	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106022	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	0.2	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106023	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106024	10/16/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/26/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106025	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106026[c]	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/12/2015	Q4 2015	ND	U	1	ND	U	1	ND	U	1	ND	U	3
	8/17/2015	Q3 2015	ND	U	1	ND	U	1	ND	U	1	ND	U	3
KAFB-106027	10/15/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/12/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106028	4/22/2019	Q2 2019	**220**	--	0.5	130	--	0.8	77	--	0.5	38	--	2
	10/22/2018	Q4 2018	**6,800**	--	100	**1,400**	--	16	**15,000**	--	100	**3,000**	--	40
	10/17/2017	Q4 2017	**9,200**	--	100	**2,800**	--	10	**16,000**	--	100	**3,500**	--	10
KAFB-106029	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106030	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106031	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106032	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106033	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106034	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106035	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106036	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106037	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106038	10/17/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	4/4/2019	Q2 2019	ND	U	0.5	ND	U	0.8	63	--	0.5	ND	U	2
	11/7/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.3	J	0.5	ND	U	2
KAFB-106039	10/17/2019	Q4 2019	ND	U	0.5	ND	U	0.8	4	--	0.5	ND	U	2
	11/7/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.5	J	0.5	ND	U	2
	10/9/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106040	10/16/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/7/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.3	J	0.5	ND	U	2
	10/25/2017	Q4 2017	ND	U	1	ND	U	1	0.5	J	1	ND	U	1
KAFB-106041	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106042	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106043	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106044	10/15/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/12/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106045	10/21/2019	Q4 2019	ND	U	0.5	ND	U	0.8	3	--	0.5	ND	U	2
	10/25/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.3	J	0.5	ND	U	2
	10/30/2017	Q4 2017	ND	U	1	ND	U	1	0.7	J	1	ND	U	1
KAFB-106046	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/1/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106047	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/1/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106048	10/22/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	11/13/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.4	J	0.5	ND	U	2
	11/1/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106049	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106050	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106051	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106052	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106053	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106054	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106055	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106057	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/9/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106058	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106059	10/21/2019	Q4 2019	**13,000**	--	50	640	--	8	**12,000**	--	50	**2,000**	--	20
	4/26/2019	Q2 2019	**12,000**	--	50	**900**	--	8	**15,000**	--	50	**3,100**	--	20
	10/25/2018	Q4 2018	**17,000**	--	50	**920**	--	8	**20,000**	--	50	**3,100**	--	20
KAFB-106060	10/11/2019	Q4 2019	0.2	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/1/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/23/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106061	11/5/2019	Q4 2019	ND	U	0.5	ND	U	0.8	4	--	0.5	ND	U	2
	4/2/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/24/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106062	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/4/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106063[d]	10/4/2018	Q4 2018	**6,400**	--	50	**2,000**	--	8	**20,000**	--	50	**5,700**	--	20
	4/10/2018	Q2 2018	**2,000**	--	10	**710**	--	10	**3,600**	--	100	**1,200**	--	10
	10/24/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106064[d]	10/4/2018	Q4 2018	**3,600**	--	50	**1,200**	--	8	**12,000**	--	50	**3,800**	--	20
	4/10/2018	Q2 2018	**3,800**	--	100	**2,100**	--	100	**15,000**	--	100	**5,900**	--	100
	10/24/2017	Q4 2017	**3,000**	--	10	**850**	--	10	**8,000**	--	100	**3,100**	--	10
KAFB-106065	10/11/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/2/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	0.2	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106066	10/10/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/2/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106067	10/14/2019	Q4 2019	1	--	0.5	0.7	J	0.8	ND	U	0.5	ND	U	2
	4/1/2019	Q2 2019	1	--	0.5	2	--	0.8	ND	U	0.5	ND	U	2
	10/5/2018	Q4 2018	5	--	0.5	2	--	0.8	0.2	J	0.5	ND	U	2
KAFB-106068	10/11/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/1/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106069	10/16/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/30/2019	Q2 2019	ND	U	0.5	ND	U	0.8	0.2	J	0.5	ND	U	2
	10/29/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106070	11/1/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106071	11/1/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106072	11/1/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/5/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106073	10/17/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/6/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/10/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106074	10/22/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	11/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.3	J	0.5	ND	U	2
	10/10/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106075	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/23/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/12/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106076	10/16/2019	Q4 2019	1	--	0.5	37	--	0.8	ND	U	0.5	100	--	2
	5/2/2019	Q2 2019	4	--	0.5	40	--	0.8	41	--	0.5	100	--	2
	10/30/2018	Q4 2018	1	--	0.5	62	--	0.8	20	--	0.5	180	--	2
KAFB-106077	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	2	--	0.5	ND	U	2
	4/23/2019	Q2 2019	ND	U	0.5	ND	U	0.8	0.5	J	0.5	ND	U	2
	11/9/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.6	J	0.5	ND	U	2
KAFB-106078	10/15/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/2/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/17/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106079	10/23/2019	Q4 2019	**140**	--	0.5	34	--	0.8	66	--	0.5	79	--	2
	10/23/2018	Q4 2018	**1,800**	--	5	200	--	0.8	51	--	0.5	380	--	2
	11/2/2017	Q4 2017	**580**	--	10	200	--	1	140	--	1	610	--	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106080	10/16/2019	Q4 2019	**170**	--	0.5	9	--	0.8	ND	U	0.5	4	J	2
	4/3/2019	Q2 2019	**8**	--	0.5	5	--	0.8	0.3	J	0.5	ND	U	2
	10/18/2018	Q4 2018	**16**	--	0.5	8	--	0.8	0.2	J	0.5	ND	U	2
KAFB-106081	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	4/24/2019	Q2 2019	ND	U	0.5	ND	U	0.8	3	--	0.5	ND	U	2
	10/18/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106082	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.4	J	0.5	ND	U	2
	10/10/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106083	10/18/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.6	J	0.5	ND	U	2
	10/10/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106084	10/22/2019	Q4 2019	ND	U	0.5	ND	U	0.8	2	--	0.5	ND	U	2
	10/31/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.5	J	0.5	ND	U	2
	10/10/2017	Q4 2017	ND	U	1	ND	U	1	0.6	J	1	ND	U	1
KAFB-106085	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106086	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106087	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106088	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	0.2	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106089	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106090	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106091	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106092	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106093	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106094	10/14/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2018	Q4 2018	0.3	J	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/11/2017	Q4 2017	1	--	1	0.7	J	1	ND	U	1	ND	U	1
KAFB-106095	10/21/2019	Q4 2019	ND	U	0.5	ND	U	0.8	2	--	0.5	ND	U	2
	11/13/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/11/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106096	10/10/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/16/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/11/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106097	1/15/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/15/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/29/2019	Q2 2019	ND	U	0.5	ND	U	0.8	3	--	0.5	ND	U	2
KAFB-106098	1/15/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/15/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/30/2019	Q2 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
KAFB-106099	1/16/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/12/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2019	Q2 2019	ND	U	0.5	ND	U	0.8	0.7	J	0.5	ND	U	2
KAFB-106100	1/16/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/12/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/1/2019	Q2 2019	ND	U	0.5	ND	U	0.8	4	--	0.5	ND	U	2
KAFB-106101	1/17/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/11/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/26/2019	Q2 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
KAFB-106102	1/17/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/11/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/25/2019	Q2 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
KAFB-106103	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106104	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106105	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106106	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106107	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106149-484	11/1/2019	Q4 2019	**8,200**	--	50	560	--	8	**10,000**	--	50	**2,300**	--	20
	4/16/2019	Q2 2019	**26,000**	--	250	**1,600**	--	400	**33,000**	--	250	**6,000**	--	1,000
	10/3/2018	Q4 2018	**11,000**	--	50	**880**	--	8	**16,000**	--	50	**3,400**	--	20
KAFB-106151-484	11/1/2019	Q4 2019	**1,100**	--	10	540	--	2	20	--	1	230	--	4
	4/18/2019	Q2 2019	**1,900**	--	10	600	--	16	70	--	1	350	--	4
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106152-484	11/1/2019	Q4 2019	**1,500**	--	3	330	--	4	850	--	3	360	--	10
	4/18/2019	Q2 2019	**430**	--	5	300	--	8	12	--	0.5	290	--	20
	10/3/2018	Q4 2018	**71**	--	0.5	1	--	0.8	2	--	0.5	17	--	2
KAFB-106153-484	11/1/2019	Q4 2019	**9,000**	--	100	400	--	16	**7,100**	--	100	**1,800**	--	40
	4/18/2019	Q2 2019	**9,200**	--	100	440	--	160	**9,100**	--	100	**1,800**	--	400
	10/3/2018	Q4 2018	**4,700**	--	25	54	--	4	**1,400**	--	3	250	--	10
KAFB-106201	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106202	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106203	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/18/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106204	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106205	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106206	10/23/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106207	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106208	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106209	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106212	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106213	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106214	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106215	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106216	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106217	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106218	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106219	11/5/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106220	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106221	11/4/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/4/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106222	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106223	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106224	10/24/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106225	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106226	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	0.9	J	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106227	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/3/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106229[e]	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	11/20/2015	Q4 2015	0.376	J	1	ND	U	1	ND	U	1	ND	U	3
KAFB-106230[f]	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/7/2016	Q2 2016	ND	U	1	ND	U	1	ND	U	1	ND	U	1
	11/18/2015	Q4 2015	ND	U	1	ND	U	1	ND	U	1	ND	U	3
KAFB-106231	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106232	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/6/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106235-438	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106235-472	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106235-501	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106236-436	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106236-470	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106236-499	10/29/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/1/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1
KAFB-106240-449	1/7/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/30/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/9/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106241-428[e]	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106242-418[e]	10/28/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/8/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106243-425	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/2/2018	Q4 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	9/4/2018	Q3 2018	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106244-445	1/7/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/30/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/30/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/9/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106245-460	1/8/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	7/30/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	5/20/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106247-450	1/6/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	8/12/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/16/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106S1-447	1/9/2020	Q1 2020	**7,800**	--	50	620	--	8	**10,000**	--	50	**2,600**	--	20
	10/31/2019	Q4 2019	**7,000**	--	100	610	--	16	**8,800**	--	100	**2,400**	--	40
	8/12/2019	Q3 2019	**5,700**	--	50	510	--	8	**5,600**	--	50	**2,000**	--	20
	4/16/2019	Q2 2019	**6,600**	--	100	580	--	160	**8,900**	--	100	**2,400**	--	400
KAFB-106S2-451	1/6/2020	Q1 2020	**9,800**	--	50	**880**	--	8	**12,000**	--	50	**4,600**	--	20
	10/31/2019	Q4 2019	**8,300**	--	100	560	--	16	**8,700**	--	100	**3,600**	--	40
	8/13/2019	Q3 2019	**6,000**	--	13	210	--	20	**4,400**	--	13	**1,400**	--	50
	4/16/2019	Q2 2019	**8,800**	--	100	**930**	--	160	**15,000**	--	100	**4,100**	--	400

Table 3-9
Historical BTEX 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	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD	Result	Val Qual	LOD
KAFB-106S3-449	1/9/2020	Q1 2020	**5,500**	--	25	**1,400**	--	4	**4,900**	--	25	**4,200**	--	10
	10/31/2019	Q4 2019	**4,800**	--	50	**930**	--	8	**3,600**	--	50	**2,800**	--	20
	8/13/2019	Q3 2019	**390**	--	10	22	--	16	19	J	10	180	--	40
	4/16/2019	Q2 2019	**4,800**	--	50	**720**	--	80	**6,000**	--	50	**2,200**	--	200
KAFB-106S4-446	1/6/2020	Q1 2020	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	10/31/2019	Q4 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	8/13/2019	Q3 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
	4/16/2019	Q2 2019	ND	U	0.5	ND	U	0.8	ND	U	0.5	ND	U	2
KAFB-106S5-446	1/9/2020	Q1 2020	**1,500**	--	10	**1,600**	--	16	**4,900**	--	10	**3,100**	--	40
	10/31/2019	Q4 2019	**1,300**	--	3	**1,700**	--	40	**3,400**	--	25	**2,500**	--	10
	8/12/2019	Q3 2019	**980**	--	3	**1,400**	--	4	**2,300**	--	25	**1,700**	--	10
	4/16/2019	Q2 2019	**1,300**	--	25	**1,400**	--	40	**2,500**	--	25	**1,900**	--	100
KAFB-106S7-451	1/9/2020	Q1 2020	**6,700**	--	50	**1,200**	--	8	**7,700**	--	50	**4,000**	--	20
	10/31/2019	Q4 2019	**5,900**	--	50	**1,200**	--	8	**7,800**	--	50	**4,000**	--	20
	8/12/2019	Q3 2019	**230**	--	3	94	--	4	490	--	3	210	--	10
	4/16/2019	Q2 2019	**3,800**	--	25	450	--	40	**3,600**	--	25	**2,200**	--	100
KAFB-106S8-451	1/6/2020	Q1 2020	**200**	--	0.5	27	--	0.8	470	--	5	160	--	2
	10/31/2019	Q4 2019	**1,800**	--	5	160	--	8	**5,600**	--	50	**1,100**	--	20
	8/12/2019	Q3 2019	**2,200**	--	5	350	--	8	**8,400**	--	50	**2,000**	--	20
	4/16/2019	Q2 2019	**2,100**	--	100	550	--	160	**10,000**	--	100	**2,700**	--	400
KAFB-106S9-447	1/9/2020	Q1 2020	**7,300**	--	50	**970**	--	8	**11,000**	--	50	**2,700**	--	20
	11/1/2019	Q4 2019	**7,300**	--	50	**1,100**	--	8	**6,900**	--	50	**1,900**	--	20
	8/13/2019	Q3 2019	**2,900**	--	10	630	--	16	**2,700**	--	10	**980**	--	40
	4/16/2019	Q2 2019	**9,000**	--	100	**1,200**	--	16	**14,000**	--	100	**2,800**	--	40
KAFB-3411	10/17/2019	Q4 2019	ND	U	0.5	ND	U	0.8	1	--	0.5	ND	U	2
	10/22/2018	Q4 2018	ND	U	0.5	ND	U	0.8	0.5	J	0.5	ND	U	2
	10/30/2017	Q4 2017	ND	U	1	ND	U	1	ND	U	1	ND	U	1

Table 3-9
Historical BTEX Concentrations

[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) 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 Tapwater RSL. For benzene, ethylbenzene, and toluene, the project screening level is the EPA MCL. For total xylenes, the project screening level is the NMWQCC numeric standard.

[b] This well was not sampled in Q2 2019 due to suspected biofouling in the well.

[c] This well was not sampled between Q4 2015 and Q4 2019 due to security issues.

[d] 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, and results will be available in the next report.

[e] This well has not been sampled three times for these analytes, all historical data from this well is presented here.

[f] This well was not sampled between Q2 2016 and Q4 2019 due to security issues.

µg/L = microgram per liter
AFB = Air Force Base
BTEX = benzene, toluene, ethylbenzene, and total xylenes
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
ND = not detected
NMWQCC = New Mexico Water Quality Control Commission
Q1 = first quarter
Q2 = second quarter
Q3 = third quarter
Q4 = fourth quarter
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed 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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

			Location ID:				KAFB-003			KAFB-003			KAFB-003		
			Field Sample ID:				GWK003-2011			GWK003-2012			GWK003-2013		
			Sample Date:				1/7/2020			2/4/2020			3/5/2020		
			Sample Type:				REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOD**
EDB	Method E504.1 (µg/L)	1,2-dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (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	0.5	ND	U	0.5	ND	U	0.5
		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	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NS	NS	NS	NS	18.3			19.2			20.1		
		Specific Conductance (µS/cm)	NS	NS	NS	NS	417.4			560			458.4		
		pH (S.U.)	NS	NS	NS	NS	7.87			7.67			7.86		
		ORP (mV)	NS	NS	NS	NS	223.0			65.2			245.0		
		DO (mg/L)	NS	NS	NS	NS	4.47			4.29			4.82		
		Turbidity (NTU)	NS	NS	NS	NS	0.31			0.14			0.23		

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

			Location ID:				KAFB-015			KAFB-015			KAFB-015		
			Field Sample ID:				GWK015-2011			GWK015-2012			GWK015-2013		
			Sample Date:				1/7/2020			2/4/2020			3/5/2020		
			Sample Type:				REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOD**
EDB	Method E504.1 (µg/L)	1,2-dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (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	0.5	ND	U	0.5	ND	U	0.5
		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	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.8			23.7			24.1		
		Specific Conductance (µS/cm)	NS	NS	NS	NS	472.0			714			558		
		pH (S.U.)	NS	NS	NS	NS	7.84			7.74			7.96		
		ORP (mV)	NS	NS	NS	NS	248.9			100.7			264.0		
		DO (mg/L)	NS	NS	NS	NS	1.54			0.77			1.14		
		Turbidity (NTU)	NS	NS	NS	NS	0.20			0.20			0.38		

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

			Location ID:				KAFB-016			KAFB-016			KAFB-016		
			Field Sample ID:				GWK016-2011			GWK016-2012			GWK016-2013		
			Sample Date:				1/7/2020			2/4/2020			3/5/2020		
			Sample Type:				REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOD**
EDB	Method E504.1 (µg/L)	1,2-dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (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	0.5	ND	U	0.5	ND	U	0.5
		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	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NS	NS	NS	NS	21.3			23.4			23.1		
		Specific Conductance (µS/cm)	NS	NS	NS	NS	522.7			827			604		
		pH (S.U.)	NS	NS	NS	NS	7.00			6.74			7.63		
		ORP (mV)	NS	NS	NS	NS	262.0			156.6			305.8		
		DO (mg/L)	NS	NS	NS	NS	1.41			2.52			2.98		
		Turbidity (NTU)	NS	NS	NS	NS	0.40			0.22			0.41		

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

			Location ID:				ST106-VA2			ST106-VA2			ST106-VA2		
			Field Sample ID:				GWVA2-2011			GWVA2-6011			GWVA2-2012		
			Sample Date:				1/7/2020			1/7/2020			2/4/2020		
			Sample Type:				REG			Field Duplicate			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**	**Result**	**Val Qual**	**LOQ**
EDB	Method E504.1 (µg/L)	1,2-dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.018	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (µg/L)	Benzene	5	5	4.6	5	ND	UJ	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	UJ	0.5	ND	U	0.5	ND	U	0.5
		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	UJ	0.5	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NS	NS	NS	NS	17.0			17.0			20.6		
		Specific Conductance (µS/cm)	NS	NS	NS	NS	430.3			430.3			639		
		pH (S.U.)	NS	NS	NS	NS	7.89			7.89			7.69		
		ORP (mV)	NS	NS	NS	NS	224.9			224.9			74.5		
		DO (mg/L)	NS	NS	NS	NS	3.01			3.01			2.67		
		Turbidity (NTU)	NS	NS	NS	NS	0.41			0.41			0.11		

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

			Location ID:				ST106-VA2			ST106-VA2		
			Field Sample ID:				GWVA2-2013			GWVA2-6013		
			Sample Date:				3/5/2020			3/5/2020		
			Sample Type:				REG			Field Duplicate		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**Result**	**Val Qual**	**LOD**	**Result**	**Val Qual**	**LOD**
EDB	Method E504.1 (µg/L)	1,2-dibromoethane	0.05	0.05	0.075	0.05	ND	U	0.018	ND	U	0.018
BTEX	Method E524.2 (µg/L)	Benzene	5	5	4.6	5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.5	ND	U	0.5
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5
		Xylenes, Total	620	10,000	190	620	ND	U	0.5	ND	U	0.5
Field Parameters		Temperature (°C)	NS	NS	NS	NS	21.8			21.8		
		Specific Conductance (µS/cm)	NS	NS	NS	NS	517.1			517.1		
		pH (S.U.)	NS	NS	NS	NS	7.87			7.87		
		ORP (mV)	NS	NS	NS	NS	261.7			261.7		
		DO (mg/L)	NS	NS	NS	NS	2.65			2.65		
		Turbidity (NTU)	NS	NS	NS	NS	0.25			0.25		

Table 4-1
Drinking Water Supply Well Analytical Results, Q1 2020

[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, 2018).
[b] EPA National Primary Drinking Water Regulations, MCLs and Secondary MCLs, Title 40 CFR Parts 141 and 143 (May 2018).
[c] EPA Region 6 RSL for Tapwater (November 2019) for hazard index = 1.0 for non-carcinogens 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) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL.
— = Compound not analyzed for.
µg/L = micrograms per liter
µS/cm = microsiemens per centimeter
ºC = degree Celsius
AFB = Air Force Base
BTEX = benzene, toluene, ethylbenzene, and total xylenes
CFR = Code of Federal Regulations
DO = dissolved oxygen
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ID = identification
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/L = milligram per liter
mV = millivolt
ND = nondetect
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
S.U. = standard units
Val Qual = validation qualifier
Val Quals based on independent data validation:
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the LOQ.

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 2020)
	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 2020)
	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 2020)
	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 2020)
	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 2020)
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 2020 Table 5-7 Monthly GWTS Performance Analytical Results for Train 2, Q1 2020
	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 2020
	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 2020
20	A representative sample of GWTS influent and effluent shall be analyzed annually for the constituents identified in Table 3.	Performed in Q3 2019; last reported in Q3 2019; Not applicable to Q1 2020
	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 2020
	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 2020
	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 2020 Table 5-7 Monthly GWTS Performance Analytical Results for Train 2, Q1 2020
	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 2020
	b. The totalized monthly volume of treated effluent transferred to all UIC wells	Table 5-2 Quantities of Groundwater Treated and Discharged, Q1 2020
	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 2020
	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 2020 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 2020
	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 2020
	c. Any UIC well rehabilitation conducted	5.3.1 Routine Maintenance Activities Table 5-9 GWTS Routine Maintenance Items, Q1 2020 5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2020
	d. Any malfunction, repair, or replacement of a flowmeter	5.3.3 Non-Routine Maintenance Table 5-10 GWTS Non-Routine Maintenance Items, Q1 2020
	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 2020
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 2020
	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 2020
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

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
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
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 2020

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
Q3 = third quarter
Q4 = fourth quarter
UIC = underground injection control

Table 5-2
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2020

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 Discharged to the GCMP[a] (gallons)
Totalizing Flowmeter[b]	FE/FIT-3108	FE/FIT-3208	FE/FIT-3108 + FE/FIT-3208	FE/FIT-3108 + FE/FIT-3208	FE/FIT-3108 + FE/FIT-3208
December 2015[c]	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**
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[d]	13,268,900

Table 5-2
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2020

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 Discharged to the GCMP[a] (gallons)
May 2018	11,238,400	8,061,600	19,300,000	0[d]	19,300,000
June 2018	14,746,800	10,186,400	24,933,200	0[d]	24,933,200
July 2018	12,038,500	7,901,100	19,939,600	0[d]	19,939,600
August 2018	14,973,100	9,583,900	24,557,000	0[d]	24,557,000
September 2018	9,516,900	7,509,600	17,026,500	0[d]	17,026,500
October 2018	1,572,600	7,288,500	8,861,100	0[d]	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	13,105,900	8,431,000	21,536,900	19,494,500	2,042,400
February 2019	12,821,800	8,443,300	21,265,100	13,624,600	7,640,500
March 2019	16,066,200	10,450,300	26,516,500	13,435,900	13,080,600
April 2019	12,729,900	8,472,000	21,201,900	7,170,800	14,031,100
May 2019	12,789,200	10,082,100	22,871,300	5,779,900	17,091,400
June 2019	9,569,300	7,798,200	17,367,500	1,512,500	15,855,000
July 2019	9,153,800	8,748,700	17,902,500	551,100	17,351,400
August 2019	17,091,500	10,580,700	27,672,200	5,494,800	22,177,400
September 2019	12,899,200	7,297,200	20,196,400	2,916,700	17,279,700
October 2019	13,112,400	10,391,900	23,504,300	17,177,900	6,326,400
November 2019	7,060,700	8,546,700	15,607,400	14,525,700	1,081,700
Dec-19	7,330,400	8,499,400	15,829,800	15,695,800	134,000
Q4 2019 Total	**27,503,500**	**27,438,000**	**54,941,500**	**47,399,400**	**7,542,100**
2019 Total	**143,730,300**	**107,741,500**	**251,471,800**	**117,380,200**	**134,091,600**
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[e]	7,280,800	8,168,800	15,449,600	4,246,900	11,202,700
Q1 2020 Total	**23,291,600**	**26,819,900**	**50,111,500**	**35,404,100**	**14,707,400**
2020 Total[f]	**23,291,600**	**26,819,900**	**50,111,500**	**35,404,100**	**14,707,400**
Cumulative Total	**512,642,900**	**326,468,400**	**839,111,300**	**305,426,035**	**533,685,265**

Table 5-2
Cumulative Quantities of Groundwater Treated and Discharged through Q1 2020

[a] Corrected volumes from human machine interface datasets.

[b] Flowmeters are inspected monthly, see Appendix I-1.

[c] 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.

[d] 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.

[e] Treatment volumes for March 2020 are calculated through March 30, 2020.

[f] Cumulative 2020 total through March 30, 2020.

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

GCMP = Tijeras Arroyo Golf Course main pond

GWTS = groundwater treatment system

Q1 = first quarter

Table 5-3
Groundwater Treatment System Extraction Well Performance, Q1 2020

Well ID	Well Parameter	January	February	March	Q1 (Average)
KAFB-106228	Average Operational Flow Rate[a] (gpm)	144.0	143.7	143.4	143.7
	Flow Rate Range[b] (gpm; min-max)	143.3 - 145.7	143.1 - 146.6	142.6 - 148.0	142.6 - 148.0
	Average Drawdown[c] (ft)	16.1	14.8	14.7	15.2
	Water Level Elevation Range[b] (ft AMSL; min-max)	4859.8 - 4861.9	4861.3 - 4862.8	4861.2 - 4864.4	4859.7 - 4864.4
	Average Specific Capacity[d] (gpm/ft)	9.0	9.7	9.8	9.5
	Average Transmissivity[d] (gpd/ft)	13,445	14,515	14,629	14,189
	Run Time %[e]	98%	99%	98%	98%
	Notes	NA	NA	NA	NA
KAFB-106233	Average Operational Flow Rate[a,f] (gpm)	161.5	161.7	162.2	161.8
	Flow Rate Range[b] (gpm; min-max)	0.0 - 161.6	0.0 - 161.7	0.0 - 162.3	0.0 - 162.3
	Average Drawdown[c] (ft)	5.3	4.6	4.4	4.8
	Water Level Elevation Range[b] (ft AMSL; min-max)	4871.8 - 4877.5	4872.4 - 4878.0	4872.5 - 4878.5	4871.8 - 4878.5
	Average Specific Capacity[d] (gpm/ft)	30.7	35.0	36.9	34.1
	Average Transmissivity[d] (gpd/ft)	46,088	52,454	55,381	51,079
	Run Time %[e]	0.8%	0.5%	0.0%	0.4%
	Notes	Intermittently Online[g]	Intermittently Online[g]	Intermittently Online[g]	Intermittently Online[g]
KAFB-106234	Average Operational Flow Rate[a] (gpm)	175.7	175.8	175.8	175.7
	Flow Rate Range[b] (gpm; min-max)	175.2 - 176.0	175.4 - 176.2	174.4 - 177.5	174.4 - 177.5
	Average Drawdown[c] (ft)	3.6	2.8	2.6	3.0
	Water Level Elevation Range[b] (ft AMSL; min-max)	4871.8 - 4872.8	4872.6 - 4875.7	4873.0 - 4873.7	4871.8 - 4875.7
	Average Specific Capacity[d] (gpm/ft)	48.7	81.5	68.0	65.7
	Average Transmissivity[d] (gpd/ft)	72,988	122,309	102,017	98,595
	Run Time %[e]	99%	98%	99%	98%
	Notes	NA	NA	NA	NA
KAFB-106239	Average Operational Flow Rate[a] (gpm)	75.6	73.4	76.5	75.2
	Flow Rate Range[b] (gpm; min-max)	34.4 - 75.4	72.2 - 74.4	32.3 - 76.0	32.3 - 76.0
	Average Drawdown[c] (ft)	9.4	8.8	7.6	8.6
	Water Level Elevation Range[b] (ft AMSL; min-max)	4872.1 - 4878.2	4872.4 - 4875.7	4873.5 - 4879.0	4872.1 - 4879.0
	Average Specific Capacity[d] (gpm/ft)	7.8	8.5	9.8	8.7
	Average Transmissivity[d] (gpd/ft)	11,697	12,696	14,637	13,017
	Run Time %[e]	99%	94%	94%	96%
	Notes	NA	NA	NA	NA
Combined Extraction Well Totals	Combined Average Operational Flow Rate[h] (gpm)	403.2	398.4	403.7	401.8
	Combined Flow Rate Range (gpm)	355.8 - 556.1	391.6 - 554.1	352.1 - 556.6	352.1 - 556.6
	Run Time %[i]	99%	100%	100%	99%

Table 5-3
Groundwater Treatment System Extraction Well Performance, Q1 2020

[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 2020.

[b] Ranges are provided from daily values throughout Q1 2020.

[c] Average drawdown is calculated from the approximate static water elevation in Q1 2020, 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 HMI 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] Due to temporary limited run-time pending maintenance of KAFB-7, the indicated flowrates for KAFB-106233 only apply during periods of active extraction.

[g] KAFB-106233 was intermittently online to maintain water level at injection well KAFB-7.

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

[i] 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 = gallons per day
gpm = gallons per minute
GWTS = groundwater treatment system
HMI = human machine interface
ID = identification
max = maximum
min = minimum
NA = not applicable
Q1 = first quarter

Table 5-4
Groundwater Treatment System Injection Well Performance, Q1 2020

Well ID	Well Parameter	January	February	March	Q1 (average)
KAFB-7	Average Operational Flow Rate[a] (gpm)	411.1	410.4	414.6	411.4
	Flow Rate Range[b] (gpm; min-max)	0.0 - 559.34	0.0 - 561.0	0.0 - 1029.0	0.0 - 1029.0
	Volume Injected[c] (gal)	18,919,600	12,237,600	4,246,900	11,801,367
	Average Water Level Elevation[d] (ft AMSL)	4916.1	4904.6	4891.8	4,904.2
	Water Level Elevation Range[d] (ft AMSL; min-max	4878.0 - 4931.1	4876.2 - 4931.3	4877.0 - 4943.6	4876.2 - 4943.6
	Run Time (%)	100%	89.7%	35.5%	74.7%
	Notes	NA	NA	NA	NA
GWTS Effluent	Average Operational Flow Rate[a] (gpm)	411.5	408.9	418.6	413.1
	Flow Rate Range[b] (gpm; min-max)	0.0 - 765.1	0.0 - 678.2	0.0 - 682.1	0.0 - 765.1

[a] Flow rate calculation is an average rate that only includes time while the system was operational; average values were computed from HMI values throughout Q1 2020.

[b] Ranges are provided from HMI values throughout Q1 2020. 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. December injection volume calculated through March 31, 2020.

[d] Water level elevation averages and ranges include times when injection wells are not being utilized and data was collected from the HMI for Q1

AMSL = above mean sea level
ft = foot (feet)
gal = gallon(s)
gpm = gallons per minute
GWTS = groundwater treatment system
HMI = human machine interface
ID = identification
max = maximum
min = minimum
NA = not applicable
Q1 = first quarter

Table 5-5
Groundwater Treatment System Ethylene Dibromide Removal, Q1 2020

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	12/30/2020	489,351,300	9,025,600	ND < 0.019	80,510	319
		1/6/2019	491,116,300		ND < 0.019	80,510	
		1/13/2019	493,114,000		ND < 0.019	80,510	
		1/20/2019	494,888,800		0.016	80,617	
		1/27/2019	496,647,100		0.016	80,724	
		2/3/2019	498,376,900		0.016	80,829	
	February	2/10/2019	500,141,900	6,985,200	0.016	80,936	423
		2/17/2019	501,849,200		0.016	81,039	
		2/24/2019	503,596,300		0.016	81,145	
		3/2/2019	505,362,100		0.016	81,252	
	March	3/9/2019	507,137,800	7,280,800	0.012	81,332	331
		3/16/2019	508,870,800		0.012	81,411	
		3/23/2019	510,641,200		0.012	81,491	
		3/30/2019	512,642,900		0.012	81,582	
Train 2	January	12/30/2020	299,648,500	10,401,500	0.019	43,324	797
		1/6/2019	301,802,200		0.019	43,479	
		1/13/2019	303,656,700		0.019	43,613	
		1/20/2019	305,804,500		0.021	43,783	
		1/27/2019	307,953,500		0.021	43,954	
		2/3/2019	310,050,000		0.021	44,121	
	February	2/10/2019	312,174,700	8,249,600	0.025	44,322	781
		2/17/2019	314,199,700		0.025	44,514	
		2/24/2019	316,295,900		0.025	44,712	
		3/2/2019	318,299,600		0.025	44,902	
	March	3/9/2019	320,265,500	8,168,800	0.016	45,021	495
		3/16/2019	322,147,400		0.016	45,135	
		3/23/2019	324,304,100		0.016	45,265	
		3/30/2019	326,468,400		0.016	45,396	

Table 5-5
Groundwater Treatment System Ethylene Dibromide Removal, Q1 2020

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]
Q1 2020 Train 1 Total				23,291,600			1,073
Q1 2020 Train 2 Total				26,819,900			2,072
Q1 2020 Total				50,111,500			3,145

[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 5-6 and 5-7). 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 = ethylene dibromide
gal = gallon(s)
LOD = limit of detection
mg = milligram(s)
ND = nondetect
Q1 = first quarter

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2020

			Well Location ID:				GWTS-BFF-INF1			GWTS-BFF-GAC1			GWTS-BFF-EFF1			GWTS-BFF-INF1		
			Field Sample ID:				GWTS-INF1-011420			GWTS-GAC1-011420			GWTS-EFF1-011420			GWTS-INF1-020520		
			Sample Date:				1/14/2020			1/14/2020			1/14/2020			2/5/2020		
			Sample Type:				REG			REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.016	J	0.019	0.013	J	0.019	ND	U	0.019	0.016	J	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	ND	U	2	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.103
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.2			19			18.9			19		
		Spec Cond (µS/cm)	NS	NS	NS	NS	468.4			469.3			464.7			675		
		pH (S.U.)	NS	NS	NS	NS	7.57			7.09			7.08			7.79		
		ORP (mV)	NS	NS	NS	NS	509.3			87.5			160.2			600.7		
		DO (mg/L)	NS	NS	NS	NS	6.75			3.62			5.97			5.67		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2020

			Well Location ID:				GWTS-BFF-GAC1			GWTS-BFF-EFF1			GWTS-BFF-EFF1			GWTS-BFF-INF1		
			Field Sample ID:				GWTSGAC1-020520			GWTS-EFF1-020520			GWTS-EFF1DUP-020520			GWTS-INF1-030520		
			Sample Date:				2/5/2020			2/5/2020			2/5/2020			3/5/2020		
			Sample Type:				REG			REG			Field Duplicate			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.012	J	0.019	ND	U	0.019	ND	U	0.019	0.012	J	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	ND	U	2	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.103	ND	U	0.103	ND	U	0.103	ND	UJ	0.103
		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)	NS	NS	NS	NS	19.2			19.2			19.2			19.4		
		Spec Cond (µS/cm)	NS	NS	NS	NS	675			672			672			566		
		pH (S.U.)	NS	NS	NS	NS	7.33			7.28			7.28			7.19		
		ORP (mV)	NS	NS	NS	NS	376.7			439.7			439.7			127.3		
		DO (mg/L)	NS	NS	NS	NS	1.83			5.15			5.15			5.83		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2020

			Well Location ID:				GWTS-BFF-GAC1			GWTS-BFF-EFF1		
			Field Sample ID:				GWTS-GAC1-030520			GWTS-EFF1-030520		
			Sample Date:				3/5/2020			3/5/2020		
			Sample Type:				REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**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
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	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
		Xylenes, total	620	10,000	190	620	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	UJ	0.103	0.171	J	0.103
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.2			19.4		
		Spec Cond (µS/cm)	NS	NS	NS	NS	565			567		
		pH (S.U.)	NS	NS	NS	NS	6.77			6.72		
		ORP (mV)	NS	NS	NS	NS	126.5			154		
		DO (mg/L)	NS	NS	NS	NS	1.88			0.28		

Table 5-6
Monthly Groundwater Treatment System Performance Analytical Results for Train 1, Q1 2020

[a] NMWQCC 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 2019) 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) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL. Where the EPA RSL is lower than the LOQ, the project screening level is the LOQ.

µg/L = microgram per liter
µS/cm = microSiemens per centimeter
ºC = degree Celsius
AFB = Air Force Base
CFR = Code of Federal Regulations
DO = dissolved oxygen
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = nondetect
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
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
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
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 detection limit. The value associated with the U-qualifier is the LOD.

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2020

			Well Location ID:				GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-EFF2		
			Field Sample ID:				GWTS-INF2-011420			GWTS-GAC2-011420			GWTS-EFF2-011420			GWTS-EFF2DUP-011420		
			Sample Date:				1/14/2020			1/14/2020			1/14/2020			1/14/2020		
			Sample Type:				REG			REG			REG			Field Duplicate		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.021	J	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	ND	U	2	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.1	ND	U	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.0303	--	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.005
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.5			19.5			19.5			19.5		
		Spec Cond (µS/cm)	NS	NS	NS	NS	367.4			366.2			366.5			366.5		
		pH (S.U.)	NS	NS	NS	NS	7.47			7.11			7.09			7.09		
		ORP (mV)	NS	NS	NS	NS	168.2			64.8			66.1			66.1		
		DO (mg/L)	NS	NS	NS	NS	5.11			3.34			4.54			4.54		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2020

			Well Location ID:				GWTS-BFF-INF2			GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-INF2		
			Field Sample ID:				GWTS-INF2-020520			GWTS-GAC2-020520			GWTS-EFF2-020520			GWTS-INF2-030520		
			Sample Date:				2/5/2020			2/5/2020			2/5/2020			3/5/2020		
			Sample Type:				REG			REG			REG			REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.025	J	0.019	ND	U	0.019	ND	U	0.019	0.016	J	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	ND	U	2	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.103	ND	U	0.103	ND	U	0.103	ND	U	0.103
		Manganese, dissolved	0.2	NS	NS	0.2	0.0288	--	0.0052	ND	U	0.0052	ND	U	0.0052	0.0344	--	0.0052
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.6			19.6			19.8			19.7		
		Spec Cond (µS/cm)	NS	NS	NS	NS	472.2			527.3			524.2			447.8		
		pH (S.U.)	NS	NS	NS	NS	7.7			7.3			7.33			7.15		
		ORP (mV)	NS	NS	NS	NS	455.5			174.4			110			230.4		
		DO (mg/L)	NS	NS	NS	NS	5.24			1			4.28			4.91		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2020

			Well Location ID:				GWTS-BFF-GAC2			GWTS-BFF-EFF2			GWTS-BFF-EFF2		
			Field Sample ID:				GWTS-GAC2-030520			GWTS-EFF2-030520			GWTS-EFF2DUP-030520		
			Sample Date:				3/5/2020			3/5/2020			3/5/2020		
			Sample Type:				REG			REG			Field Duplicate		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	ND	U	2	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	UJ	0.103	ND	UJ	0.103	ND	UJ	0.103
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052
Field Parameters		Temperature (°C)	NS	NS	NS	NS	19.7			19.7			19.7		
		Spec Cond (µS/cm)	NS	NS	NS	NS	445.2			445.6			445.6		
		pH (S.U.)	NS	NS	NS	NS	6.75			6.72			6.72		
		ORP (mV)	NS	NS	NS	NS	111			91			91		
		DO (mg/L)	NS	NS	NS	NS	1.56			4.54			4.54		

Table 5-7
Monthly Groundwater Treatment System Performance Analytical Results for Train 2, Q1 2020

[a] NMWQCC 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 2019) 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) NMWQCC numeric standard or (2) EPA MCL. If no NMQWCC numeric standard or MCL exists for any analyte, then the project screening level will be the EPA RSL. Where the EPA RSL is lower than the LOQ, the project screening level is the LOQ.

µg/L = microgram per liter
µS/cm = microSiemens per centimeter
ºC = degree Celsius
AFB = Air Force Base
CFR = code of federal regulations
DO = dissolved oxygen
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
LOQ = limit of quantitation
MCL = maximum contaminant level
mg/L= milligram per liter
mV = millivolt
ND = nondetect
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
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
VOC = volatile organic compound
Shading = detected concentrations above the detection limit
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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 5-8
Extraction Well Analytical Results, Q1 2020

			Well Location ID:				KAFB-106228			KAFB-106233			KAFB-106234			KAFB-106239			KAFB-106239		
			Field Sample ID:				GW228-201			GW233-201			GW234-201			GW239-201			GW239-601		
			Sample Date:				1/14/2020			1/14/2020			1/14/2020			1/14/2020			1/14/2020		
			Sample Type:				REG			REG			REG			REG			Field Duplicate		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[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	0.032	--	0.019	ND	U	0.019	0.017	J	0.019	ND	U	0.019	ND	U	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	750	700	15	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	1,100	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	10,000	190	620	ND	U	2	ND	U	2	ND	U	2	ND	U	2	ND	U	2
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	37.7	--	0.150	61.5	--	0.150	54.5	--	0.150	44.0	--	0.150	44.4	--	0.150
		Iron	1.0	NS	NS	1.0	ND	U	0.103	ND	U	0.103	ND	U	0.103	ND	U	0.103	ND	U	0.103
		Magnesium	NS	NS	NS	NS	5.45	--	0.0751	9.10	--	0.0751	7.64	--	0.0751	6.24	--	0.0751	6.54	--	0.0751
		Manganese	0.2	NS	NS	0.2	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052	0.170	--	0.0052	0.167	--	0.0052
		Potassium	NS	NS	NS	NS	2.16	--	0.375	2.89	--	0.375	2.90	--	0.375	2.37	--	0.375	2.30	--	0.375
		Sodium	NS	NS	NS	NS	25.1	--	0.500	29.1	--	0.500	29.1	--	0.500	25.7	--	0.500	25.4	--	0.500
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00096	J	0.0016	0.0011	J	0.0016	0.00094	J	0.0016	0.0010	J	0.0016	0.00095	J	0.0016
		Lead	0.015	0.015	0.015	0.015	0.00017	J	0.00025	0.0016	--	0.00025	0.00043	J	0.00025	0.00073	--	0.00025	0.00071	--	0.00025

Table 5-8
Extraction Well Analytical Results, Q1 2020

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, 2018). For metals, the NMWQCC numeric standard applies to dissolved metals.

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

[c] EPA Region 6 RSL for Tapwater (November 2019) 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) 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
AFB = Air Force Base
BTEX = benzene, toluene, ethybenzene, and total xylenes
CFR = Code of Federal Regulations
EDB = ethylene dibromide (1,2-dibromoethane)
EPA = U.S. Environmental Protection Agency
ID = identification
LOD = limit of detection
MCL = maximum contaminant level
mg/L = milligram per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
Q1 = first quarter
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
Shading = detected concentrations above the detection limit
Bold/Shading = reported concentrations exceed the project screening level (none for Q1 2020)
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 detection limit. The value associated with the U-qualifier is the LOD.
-- = Validation qualifier not assigned.

Table 5-9
Groundwater Treatment System Routine Maintenance Schedule, Q1 2020

	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	
Semiannual inspections and maintenance of Tijeras Arroyo Gold Course ponds				X
Logging lockout-tagout entries				X
Logging system shutdowns				X
Emptying storm water 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[c]
Disinfection of extraction wells and conveyance lines				X[d]
Testing of alarms and interlocks				X[e]
Cleaning coils and replacing air filter for the Well Control House air conditioner				X[f]
GAC skimming of the lead GAC vessel				X[g]

Table 5-9
Groundwater Treatment System Routine Maintenance Schedule, Q1 2020

[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 15 psi and GAC is scheduled for change out when the pressure differential across a GAC vessel exceeds 10 psi.

[d] Disinfection of extraction wells and conveyance lines occurs semiannually or more often as needed.

[e] Testing of alarms and interlocks occurs annually or more often as needed.

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

[g] 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 2020

Date	Extent of Shutdown	Approximate Downtime (hours)	Cause of Shutdown
2/11/2020	Entire GWTS	6.5	Installed check valves on the Train 1 and Train 2 effluent lines
2/26/2020	KAFB-106239	24.0	Disinfected KAFB-106239
3/6/2020	Train 2	Not applicable	Replaced the Train 2 effluent skid motor
1/1/2020 - 3/31/2020	KAFB-106233	Not applicable	KAFB-106233 intermittently turned offline to maintain injection well KAFB-7 water level during injection

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